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ORIGINAL COMMUNICATIONS.

The Encouragement of Agriculture and a Taste for Rural Pursuits, are Sources of Prosperity, Refinement, and Happiness. By the Editor.

No cultivated mind pretends to question the remark, that the natural world is full of beauty and sublimity—that every object has stamped on it the impress of the Omniscient Architect. No less generally conceded is the observation, that, by a vast majority of mankind, this beauty and this sublimity are so far unperceived, as not to become the objects of pleasing contemplation and study. The causes are, undoubtedly, the familiarity of mankind with the material world, without having been taught by education to investigate the laws of nature. Agriculture having been, in all ages, the incipient as well as the chief pursuit, has, from these same reasons, failed to enlist the mental energies of the human race. Like beauty founded on simplicity, it is the first that is displayed, but the last and highest that is cultivated by enlightened nations. Thus the savage, on beholding the most trivial and gaudy article manufactured by civilized man, has his admiration excited far more than by those operations of nature by which his rude planting is succeeded with the ripened maize, and the acorn beneath his feet changes and rises to become the spreading and towering oak. In a more advanced state of society the productions of art have ever enlisted the human powers, called forth the mental energies, and obtained investigations in a far greater degree than those connected with rural culture: and hence, to prepare for any of the mechanical trades or learned professions, express apprenticeships and appropriate education have been deemed indispensable, while agriculture, like the works of nature daily before our eyes, has been considered too simple and too familiar, to require study to investigate, or apprenticeship to acquire proficiency. But in proportion as mankind become enlightened, so will agriculture, as sure as the highest order of beauty is connected with simplicity, and as sure as the study of nature reveals wonders, claim more and more the priority of mental research. This being the case, agriculture, the primitive pursuit of man, recommends itself to the fostering protection of every one who is desirous of seeing the human race advance in prosperity, refinement and happiness.

In a national point of view, the subject assumes an importance that should render it primary in the public concerns. The augmentation of wealth, which is produced by a prosperous agriculture, is most equally diffused among the people, the most permanent, the least affected by political commotions, and consequently the most favorable to independence. Wealth, from an improved husbandry and tillage of the soil, is of slow acquisition, and necessarily implies habits established by long practice—and a decided and permanent national character. Manufactures and commerce are more sudden and rapid in their growth, more dependent on extrinsic circumstances, and without prosperous agriculture are liable to those variations that are attended with individual ruin and much uncertainty in the national revenue. When agriculture is made the chief concern, legislation is rendered more simple and easy; but in proportion as any other interest receives the fostering care of government, beyond what flows from agricultural prosperity, legislation becomes more extended and complex, and assumes the nature of a mercantile and commercial house, against whose long continued success there is great uncertainty. The permanency of agricultural wealth may be illustrated by a comparison in articles protected by revenue duties. If, for instance, the sugar cane can be so far acclimated as to find a congenial soil and climate in the southern portion of the Union, no future changes in foreign countries can deprive the inhabitants of the southern states of the benefits of its culture. It is incorporated with nature—has become one of the laws, and will remain unchanged as long as the earth shall endure. But there is scarcely a manufactured article that may not, in the course of time, be affected by the skill, productiveness, and regulations of other countries.—The aid which agriculture principally requires from government, is the promotion of intelligence and science in the agricultural community; because most of the improvements are connected with the operations of nature, and consequently are permanent. Hence we may look for more durable benefits from scientific agricultural schools and experimental farms, than from tariff laws. Had the relative condition of our government permitted, of which in this place we give no opinion, the attempt to acclimate the sugar cane through the agency of these institutions, we believe success would have been as certain, and that more skill, economy, science, and intelligence, would now be employed in its culture.

This pursuit is of all others the most favorable to patriotism, and should on this account receive greater national care. In addition to the attractions of his fire-side, and those of consanguinity in common with his fellow citizens, the farmer has those of hill, dale, and meadow—of the vine which he has for many years taught to climb the arbor, and the spreading oak which his father had planted. But it is chiefly the perfection of character for which agriculture, on the score of patriotism, claims the supervision of government. It is not reasonable to suppose that Washington would have exhibited that moderation of ambition, and have continued to indulge those sentiments so congenial to the spirit of the times and our republican institutions, had not his partiality for rural pursuits been great, and his habits those of a good farmer. There is something in the very nature of rural callings so congenial to the developement of perfection in character, that, other circumstances being equal, we may ever look to them for patriotism the most genuine, and the most in consonance with the happiness of mankind.

In ancient times, the sacred plough employ'd
The kings and awful fathers of mankind:
And some, with whom compar'd, your insect tribes
Are but the beings of a summer's day,
Have held the scale of empire, rul'd the storm
Of mighty war; then, with unwearied hand,
Disdaining little delicacies, seized
The plough, and greatly independent lived.

In relation to the great and interesting subject of education, agriculture is the matrix which is to give the desired mold. Impart to our youth a taste for rural scenes, and bring them up in familiarity and conformity with a country life, and a character is formed the most compatible with our free institutions, and the most calculated to insure individual happiness.—Wherever Providence has opened a field for the cultivation of the human intellect, thither he enjoins us to conduct our youth. Agriculture presents this field—one that invites varied and extended information, and deep investigation, and pleasing and useful science. With the exception of a few of the most learned professions, no pursuit can compare with it, for subjects of diversified and profound research. What useful branch of knowledge sits not with grace upon a farmer? What fact in the whole range of the natural sciences may not be not only interesting but of practical utility to the farmer? Geology, mineralogy, botany, zoology, entomology, in fact, almost every science pertaining to the mineral, vegetable, and animal kingdoms, comes within the province of the farmer's every-day practice.

As a pursuit favorable to correct taste and virtuous refinement, no other, certainly not among the useful avocations of life, can compare with it. For, rural callings are not only peculiarly favorable for the developement of the intellectual and moral character, but afford the appropriate sphere of the highest principles of correct taste, and consequently of refinement of manners.

Since the introduction of modern landscape gardening, and a corresponding architecture, we know of no pursuit in which more varied or higher principles of beauty are brought into requisition. To lay out the grounds, to locate the ornamental trees to the best effect, to group them according to their habits, form and foliage, to design the plan and style of the dwelling and the out-buildings in such a manner as to secure the highest degree of beauty and comfort, im-

ply a delicacy, accuracy, and refinement of taste to which, as yet, only the most cultivated minds can advance pretensions. When all this is taken in connection with the scientific information which the above subjects and others that are called into requisition by the profession of a farmer require, the elevated nature of agriculture cannot fail of being perceived. It may be said that farmers generally can never expect to bestow attention to these subjects. The latitude for the exemplification of these principles of beauty is very great, and the degrees of approach towards perfection are almost infinite, and consequently are more or less within the purview of every farmer. If he erects only the most ordinary cottage, its site, its style, and its arrangement for comfort, are subjects that require taste and judgment. If he wishes to set out an ornamental plant, or to direct a climber, all his native taste, and all that arising from converse and reading, are called into action. On the female mind the cultivation of flowers, and an attention to landscape gardening, have an effect that improves and refines. The floral tints and hues, the forms and color of the foliage, and the ever varying light and shade falling on the scene, afford the most pleasing ideas of beauty, and serve to soften the manners.

Every citizen takes a pleasure in seeing the rural portions of his native country exhibit evidences of taste and prosperity. What more pleasing than to behold all nature smiling—fields crowned with the richest harvest—woodlands abounding in material for fuel, for the useful arts, and for our naval strength—substantial and tasteful dwellings and farm-houses betokening comfort and plenty, and every spot exhibiting the careful supervision and industry of the farmer. Such scenes excite complacency and patriotism—emotions very different from those that arise when traversing a country whose inhabitants, through deficiency of skill, industry, and enterprise, though possessing a rich soil and genial climate, live meagerly, and afford no idea of rural felicity.

It is expected that professional men, from their enlarged and extended views, will take a lively interest in promoting the interests of rural affairs. They know the power of knowledge, and consequently to them we are to look for the most warm and devoted advocates for every measure calculated to raise the standard of agriculture, and to diffuse a taste for the rural sciences.

Improvements in husbandry and rural culture are closely connected with a prosperous state of morality and religion. The genius of christianity inculcates neatness and order, and consequently taste—all which have their natural sphere in rural pursuits. The habits and views that are in accordance with country life, are those that are highly congenial to the genuine spirit of religion. The scenes invite to devotion, to tranquility, and to serenity. A well regulated farm, where neatness and taste are rendered conspicuous, affords the idea of happiness; and those things that serve to convey this idea, must in reality have a tendency to produce this effect. Those, therefore, whose profession is to exalt the moral condition of their fellow creatures, should exert their influence to promote rural taste and prosperity—remembering that merely following a country life without habits, views, and feelings, in accordance with the beauties of nature, no very decided influence favorably predisposing the mind to virtue is produced. Moral philosophers assert that even the intellectual character of man cannot be perfected while he indulges erroneous views and hostile feelings relative to the duties which he owes to his Creator. With equal truth it may be said that rural scenes and pursuits, are the most favorable for the intellectual as well as moral developement.

One of the benefits resulting from a prosperous agriculture, is the support given to those internal improvements which, in their remote operations, remove those sectional prejudices and manners that are hostile to improvements in morals, religion, science, and government.

The profits of an agricultural life, though moderate, are generally more certain than those of most other pursuits. One cause of their certainty is that they do not excite extravagant and visionary views of acquiring wealth. Agricultural riches flow in perennial rivulets, and not in periodical torrents. Hence those parents who are desirous of the happiness of their children, should endeavor to instil early prepossessions in favor of rural scenes and pursuits.

All classes of the community look to country retirement for the consummation of their earthly enjoyments. The lawyer, the physician, the merchant, and the mechanic, are stimulated and encouraged in their toil, with the hope of acquiring wealth sufficient to secure some safe and elysian retreat, where they can enjoy, amidst the scenes of nature, peace, contentment, and competency. Their pleasures are found, in a great measure, to equal anticipation in proportion to the extent of their previous rural reading and science. To those who have been engaged in the active business of a city, that of a country life often appears monotonous, and a mere routine of drudgery, without a taste for natural science, and for the beauties of nature. This is particularly the case with the female members of families. But if their previous education and reading had embraced botanical and other similar studies, a strong attachment to a residence in the country is almost a certain result. The scenes and pursuits of rural life harmonize with the retiring modesty and the gentleness of the female character.

We have thus, faintly, we confess, pointed out some of the claims which agriculture has on all classes of the community for patronage and support. But, like education, which is universally acknowledged as of the highest interest, and deeply concerning every individual, it receives from the community at large only an assent of the understanding to its importance, without a corresponding pecuniary aid and devotion of time. Even the agricultural community, whose property, comforts and pleasures, are increased by every thing calculated to awaken an interest in rural improvements, are, as a body, slow and reluctant in giving a zealous and hearty support to their own cause; therefore, to the liberal and enlightened of every calling and profession, must they who engage in exciting the attention of their fellow-citizens to agriculture look for aid and encouragement.

Suggestions in relation to Farmers' Work for January. By the EDITOR.

Although not much action or labor is requisite in January, yet it is, or rather should be rendered, the most important and eventful month in the year. It is presumed the farmer will call to mind his whole history, from his youthful days to his present progress in manhood: that he will reflect on those circumstances that formed the habits and gave to his mind the bias which resulted in the formation of his character, and in placing him in his present condition—will call to mind the defects of his education, the many neglected opportunities for improvement, and the many long winter evenings suffered to pass away without any systematic reading or study. If, on the supposition he is forty years of age, he take twenty-five in which his mind has been sufficiently matured for self-education, and make a calculation of the hours that have been lost, the number will appear great. Suppose the only time he could devote to improvement was evenings, during the six colder months: three hours for five evenings in the week would amount to four hundred and ten in the six months, or twelve thousand three hundred and eighty in the twenty-five years. These, estimating the day at twelve hours, will amount to nearly *three years*, during which how many interesting volumes could have been read, and how much valuable and practical science could have been obtained! In order to form some just estimate of the benefits of thus devoting the leisure to improvement, the farmer should take into consideration the influence which this practice would have had on the rising members of his family. If he has sons nearly grown, he will reflect on their defects—will consider the probable effects which a taste for useful reading would have had in remedying these deficiencies. Among the effects, he might enumerate a greater attachment to home, more pleasure and more enterprize in farming operations, greater respectability and influence in the neighborhood, and habits, views, and feelings, more in consonance with happiness.

Another train of reflection which is appropriate for this month, is for the farmer to compare his system of operations with that of the very best and most successful farmers of his acquaintance—to bring before his mind all the circumstances, and all the modes of operation, that have resulted in their enjoyment of comfort and wealth—and to see how far they could have been, by energy, decision, and perseverance, adapted to his own condition. After being fully sensible to what extent he could have introduced their practices, and their methods of economy, as a substitute for his, or as an improvement on some of them, it will behove him to make timely preparations, and to secure the means to carry them into full effect. The practice of closely comparing our situation with that of those who are far our superiors in enterprize, skill, industry, and economy, is an excellent one, and every farmer will find himself benefitted by it.

He will next cast his eye about his premises: first examine the condition of his dwelling—see if all things are in such order and arrangement as to secure the greatest comfort and economy. It is often the case that a few days' labor, or a

few dollars, or even as many shillings, expended about a house, will remove sources of great inconvenience, or secure very desirable conveniences, and thus cause the wife to smile for a month, and be in good humor the whole year round. Carrying his supervision to the barn, and other out-buildings, he will first consider if they do not occupy too much valuable land by being too detached. After planning their arrangement, bestowing those repairs, and making those alterations that are requisite for the comfort and health of all the live stock, he will, as to a subject of primary importance, give attention to the increasing and securing of manure. His success in farming will depend more on his management in respect to manure, than in any other department. Sheds to cover the manure have been very strongly recommended; but if the yard is not large, and litter and dirt are plentifully supplied, the waste is not great, especially if a cistern is provided to receive all the liquid that passes through the manure.

After having completed the plan of his operations in reference to his out-buildings and live stock, he will next extend his views over the tilled part of his farm. By comparing its products with what the same number of acres under a high state of cultivation would produce, he may form a pretty correct opinion of his management. If he has not means nor facilities to procure sufficient manure to put his land under high tillage, his only course is to till a less number of acres by selling a part of his land, bringing into wood, putting it into permanent grass, or leasing it out on certain stipulated conditions. Some system of reform must be adopted—must be carried into effect.

He must next take into view the number of acres included in those unproductive portions of rough and rocky land, or such as are covered with weeds, briars, and other useless vegetation, and form a calculation of the present value of the trees that he might, at little or no expense, have set out twenty years ago.

Having duly considered the improvement which his waste land is susceptible of, he will proceed to examine his wood-land—to see if any parts are too thickly or too thinly wooded, and how they could be remedied—to calculate the additional value to the timber from occasional pruning. In arriving at this estimate, all former prejudices, and all the practices of the neighborhood, must not be consulted, but only the principles of nature and science, the dictates of common sense, and the results of observation and reflection. If possible, some works on the importance, utility, and economy, of forest pruning, should be obtained and read.

We have thus given a few hasty thoughts on farmers' work for January. To sum them up in a few words, we would say, let farmers spend most of the month in examining, calculating, reflecting, and in forming a plan of operation.

Suggestions relative to Gardeners' Work for January. By the EDITOR.

Proficients in gardening may deem it so far useless to give hints relative to their duties as to smile at the attempt; but they should recollect, that even most of the moral restraint exerted on mankind is the repetition of the precepts known in the infancy of the world. Memory is treacherous, and consequently, we must be frequently reminded of those things we have once learned, and at the same time remember that the collective wisdom of mankind is—occasionally, at least—bringing out something new. We, for our part, have so favorable an opinion of suggestions, that if we can, in the course of the year, give one that is of service to a subscriber, we have returned an equivalent for the price paid for our paper.

It is very easy to see that the relative proportion of gardeners in our population is destined to increase; and from the fact that great efforts are being made in Europe, from whence come most of our gardeners, to raise their standing in science and general literature, we may expect them to exert an increasing influence among us. An idea relative to this influence is suggested to our minds. Gardeners stand more nearly connected to the families by whom they are employed than any other class of hired persons. The gardener is obliged from the nature of his employment to please not only his employer, but his lady and daughters: their taste and fancy in flowers is to be consulted, and the kinds and qualities of the fruit and vegetables are to be such as to please them: in a word, his business requires that he should, in some measure at least, be a lady's man. From this near relation which he holds to the family, it is important that he should pay some attention to his manners, and to his disposition—for no one, who values the good will of his fellow-creatures, will ever deem it unimportant to get into the good graces of the ladies. Spending his time almost altogether about the house, and in such close connection and constant communion with the family, the gardener should lay down those rules to govern his conversation and conduct that are in accordance with good breeding and the requirements of virtue and morality. Every thing crabbid, gross, and unchaste, should be carefully avoided. There is one practice that is by no means uncommon in our country, but is, notwithstanding, very objectionable to many families, and desirable to none—this is, profane swearing. It will be well, therefore, for the gardener to include this among those that are not only to be *kept down*, but *rooted out*. In closing this train of our thought, we would say to the gardener: Be diligent, not only in the cultivation of the useful and ornamental in the garden, but also the pleasing in manners and disposition, as well as the valuable in intellect.

It would be well for every gardener, in the course of this first month of the new year, to peruse the lives of some of the most eminent and successful gardeners—to trace out the causes which led to their eminence and usefulness—and to adopt similar courses as far as can be adapted to present circumstances. If the requisite books are wanting, let the gardener devote the leisure hours of this month in writing for publication, in this or some other periodical, a communication, which shall embrace some of the most important rules and suggestions that are calculated to secure the success and increase the usefulness and respectability of gardeners.

It is our intention to give monthly memoranda of the practical operations for farmers and gardeners, serving rather as hints and suggestions, than directions to those that are already experienced and deeply interested in every improvement effected in their profession. If we can, by the preceding remarks, induce any of our readers to reflect, and to mature some plan or system of operation, we shall have made a good beginning in the New Year.

An Extraordinary Jargonelle Pear. By MR. M. SAUL. To the Editor of the New-York Farmer and American Gardener's Magazine.

SIR,—The pear, of which the following is a drawing, was grown in this town this season. The one at the stem was first formed; it then sent out a blossom, which produced the second; this produced two blossom buds, from which were grown the two smaller ones. I have an account of a similar production of a pear, grown in another place. There were six well formed pears. Yours, M. SAUL.

Lancaster, England, October, 1832.

Feeding Fowls in Winter to increase their laying of eggs. By A SMALL FARMER.

MR. EDITOR,—In a late number of your 5th vol. you gave some interesting information on feeding fowls to increase their eggs in winter. I am a small farmer, having only about a dozen acres, and am trying to support my family better than my next neighbor, whose family consists of the same number as mine, but whose farm embraces upwards of 200 acres. I have near 100 hens and 14 cocks—have been feeding them with stimulating food—buckwheat, &c. mixed with chopped leek-tops and other heating vegetables. I now obtain twenty-five eggs per day. Yours, &c. A SMALL FARMER.

A School of Agriculture. By B.

The following article on the important subject of Agricultural Schools, we republish from the December number of the previous volume of the Farmer. We hope all those who take pleasure in rural improvements will attentively read the communication, and duly consider the tendency of its suggestions.—[ED.]

No. I.

And why not a school of Agriculture as well as a school of Medicine, of Law, or of Divinity? The objects of education should be, not only to qualify youth for the discharge of civil and social duties, but to facilitate their knowledge in the particular business which is to form their employment in manhood; Agriculture is as necessary to the wants and comforts of life, as are the learned professions, and mainly contributes to our wealth and prosperity. It gives employment to the mass of our population, and is the great business of our state. Politically and morally, it is the conservative organ of the body politic. The interests of all are consequently indentified with its prosperity and improvements. Its pursuits are interwoven with the whole range of the natural sciences; and are as susceptible of being benefitted by their study and application, as are any of the civil employments of life. Why not extend, then, to this great branch of industry, that sort of education which is so eminently calculated to multiply its products, and at the same time to raise the moral and intellectual standard of that class of our citizens, who, from their numbers, must continue to control our political destinies, and give the impress to our character as a people.

It will not be said, I trust, that manual labor is incompatible with mental improvement. The exercise which labor gives is as essential to the developement and energy of the mind, as it is to the health and muscular strength of the body. It stimulates the head to plan, and the hands to execute. Among those who truly deserve the appellation of public benefactors, by their successful exertions to render the arts and sciences beneficial to society, our country can boast of a Franklin, a Rittenhouse, a Fulton, a Whitney, and others, who blended labor with study, and who either followed the plough or toiled in the shop.

Among the subjects submitted to the special inquiry of a committee, by the State Agricultural Society, was that of the propriety of establishing an Agricultural School, to give instruction in the theory and practice of husbandry. In anticipation of the report of this committee, I am desirous of calling the public attention to the subject; and I propose to point out, through the medium of your paper, Mr. Editor, some of the bearings which such a school is calculated to have upon the character, prosperity, and happiness of the state.

The bounties, like the burthens of the state, should be shared proportionally by all classes of its population. This is not now our case in regard to education. The benefits of the common school system, it is true, are dispensed with an equable and impartial hand. But here the equality ceases. Those destined to toil for a livelihood, to clothe, to feed and to enrich us by their labor, are turned off to shift for themselves, like the younger sons of an English Baron, without patrimony; while the public purse continues open to those who seem destined by chance, rather than by merit, to enjoy peculiar distinctions in society. Our colleges and academies, which share liberally of the public bounty, are vestibules to the *learned*, not to the *laborious* employments—to the *few*, not to the *many*. The studies which they offer are not adapted to the agricultural student, because *he* should learn in youth that which he is to practice in manhood. These schools teach nothing practically in husbandry; nor are their scientific instructions adequately adapted to its uses. The interests of productive labor have but an incidental and precarious place among the studies of a college. The state has expended more than two millions of dollars upon what I term professional schools; but not a cent to advance directly the knowledge of the agriculturist, the artizan or the manufacturer, beyond their common school instructions. Thus, on the score of justice and impartiality, the laboring classes have a right to claim, and the state are bound to grant them, an equivalent for these professional schools.

The business of husbandry may be likened to the healing art. The farmer, as well as the physician, may plod on mechanically, without the aid of study, or of science,—happy, if you please, in his conceits and in his ignorance.—Both may have tolerable success by adopting the example of enlightened neighbors, or following the impulse of their own discriminating minds; yet both would do better were they to understand perfectly the organization and properties of the subjects upon which they are to operate, or are to employ, be those subjects animals, plants, or earths, medicine or manure. Generations have been engaged in investigating the business of both professions, and have handed down to us the result of their study and experience. These lessons of wisdom are considered indispensable to the student of medicine. They are no less beneficial to the student of agriculture.

And what, that is useful, it may be asked, is to be learned in an agricultural school, which cannot be acquired in our existing seminaries, or with a good farmer! This question I propose to answer in another number.

B.

November, 1832.

No. II.

I promised in my last to point out some of the branches of useful knowledge, that may be acquired in an agricultural school, which are not attainable, or but imperfectly so, either in our existing schools, or in the ordinary labors of a farm.

As I have already remarked, our schools afford no practical, and our farms but very little, if any, scientific instruction in the business of farming. To obtain a good proficiency in either, it is necessary that they be blended together. The mind and the body are then striving to reciprocate the benefits and pleasures which each receives from the other. Theory and practice are necessary in the learned professions, to attain to eminence; and they are not less beneficial when combined in the business of husbandry.

A school which shall combine with a literary and scientific education, practical instructions in farming and gardening, will afford to the student the following, among other advantages, highly conducive to his future usefulness and prosperity as a farmer.

He will acquire in *Botany* the names and relations of plants,—a knowledge of the forms and functions of their respective organs—their habits and economical properties, and their mode of nourishment and propagation.

Chemistry will enable him to ascertain the composition and elements of the materials and substances employed in his labors, of combining and separating them, and of graduating his practice by their known properties, with economy of expense and certainty of result.

Mechanical science will familiarize to his mind the principles upon which his machinery and implements are constructed, and upon which their relative value depends, and will assist him to discover the cause of defects, and to supply suitable remedies.

The study of the *Animal Kingdom* will make him acquainted with the anatomy of domestic animals,—with their diseases and the modes of cure,—and with the principles of improving and estimating the relative profits of different breeds.

He may learn the properties of *earths* and *soils*—their distinctive characters,—their uses in vegetation, and the means of improving their quality;—the theory of the operation of manures,—and the agency of heat, light, air, and water, in the process of vegetation.

He may be instructed theoretically and practically, in the very important business of keeping *farm accounts*; by which the profit and less in any particular branch of husbandry, or of any particular crop, is readily ascertained, and by which we can alone make of capital and labor the most profitable and judicious expenditure.

A Garden, which should be attached to the institution, should contain specimens of all hardy plants, which are useful in commerce or the arts,—which administer to our domestic comforts, or which are merely ornamental. This will aid in the study of botany, and serve to illustrate the character and relative value of species and varieties; and afford instructions in the propagation and culture of fruits, flowers, and vegetables.

An *experimental department* will furnish important data for future guidance. The profit and loss on different crops, and the adaptation of different soils to their growth, the economy and application of manures, the culture and management of farm crops, the utility of alternate husbandry, and the usefulness of new plants, would naturally be among the subjects of experiment; and the result would not fail of being highly instructive. There is as much benefit in guarding against a bad practice, as in adopting a good one. The one prevents loss, the other increases the profit. Comparisons, which the proverb says are "odious," are in husbandry the best test of whatever is excellent; and they may be made in every product of the farm and garden, with manifest advantage.

This school will afford, moreover, the best practical instruction in the various departments of rural labors; and what is of incalculable importance, it will inculcate and tend to establish, in the student, habits of industry and frugality,

(almost synonimous with virtue,) of system and of usefulness; and will tend to inculcate a taste for scientific and literary studies, in the hours of leisure which every employment gives, that never fails to promote the interests of humanity.

I have thus enumerated some of the advantages which the proposed school will afford to the young generation of farmers, who are to become the future guardians of our liberties, and who are to give the impress to our public character. The benefits which promise to result to the community at large from such a school, by increasing the products of the soil, by multiplying the resources, and augmenting the revenues of the state, by giving a new impetus to commerce, manufactures, and the mechanic arts, and by raising the standard of our moral and intellectual power, will form the subject of further remark. B.

No. III.

"We are republicans, when we endeavor to imbue the minds of our children with the love of science, and with such knowledge as may be likely, in maturer life, to make them useful in the stations they are called to occupy; and when we teach them to "love their neighbors as themselves."—[The Good Oberlin.*]

As indolence is the parent of vice, so is industry the incentive to virtue. And as knowledge is power, it is of the first importance that those who are the depositories of power, should possess this incentive to virtue. It follows as a corollary, that whatever tends to encourage industry, in the most numerous class of our population, by extending to it the efficient aids of science and literature, and thereby rendering its employment respectable and inviting, and its gains more certain, has an important influence in promoting the public welfare. Three-fourths of our productive labor is the contribution of agriculture. This is, as it were, the body, while the other avocations may be likened to the members; to which this gives health, strength, and character. If this flourishes, the state prospers; and the shock which withers its prospects, is simultaneously felt, with the force of the electric spark, to the remotest extremities of the body politic. Look to the old continent, and cast your eye over the new one. Where agriculture is in a high state of improvement, commerce and the arts flourish; and civil and religious freedom all seem to abound in proportion to the intelligence and industry which distinguish its agricultural population.

We must sow the seed before we can gather the harvest. We must plant the tree if we would enjoy the fruits. We must invest our capital ere we can receive the interest. And we must instruct our youth, if we would profit by the labors of their manhood. That the agriculture of our country, of one county, of one district, and of one farm, is rendered far more productive than that of another country, county, district, or farm, *by the superior intelligence, skill and industry of those who till its soil*, is a truth which needs no proof. The first impulse to improvement in the agriculture of Dutchess, was given by the example of a few men of science and enterprize; and the highly cultivated counties of Pennsylvania owe much of their improvement and prosperity to a naturalist and a civilian, whose great aim was to render science subservient to the comforts and profits of labor. Good example is always salutary, but especially in husbandry, where it exerts an extended influence, in consequence of its necessarily falling under the observation of many who are interested in adopting it. I do not flatter myself that the whole body of yeomanry could participate, directly, in the benefits of an agricultural school. But a hundred pupils, with the mental and practical instructions which it would give, and animated with the laudable ambition which it would infuse, to excel in their business, and in usefulness to society—I say, a hundred such young men, sent annually into different sections of the state, would not fail to produce an effect highly salutary to all. Moreover, if, as I verily believe, such a school should become popular, and its benefits apparent, others would be established upon its models, to the extent of the public wants. Could the agriculture of the state be made to approximate, in its improvements, to that of our best cultivated county, the gain to its wealth and prosperity would be immense. And if an agricultural school should but partially effect this object, the outlay for its establishment would be more than repaid by the increased revenues of our canals alone.

But there is another advantage which this school promises to the state, which is worthy of serious consideration; I mean that resulting to our political institutions, from the diffusion of the higher branches of knowledge among that portion of our population who, from their numbers, are emphatically its guardians. Mr. Jefferson has said, and said truly, that great cities are great political *sores* upon the body politic. And history, as well as experience, admonish us, that the tendency of professional and commercial wealth is to generate that extravagance in the style of living, and those artificial distinctions in society, which, if not incompatible with, are often dangerous to civil liberty. We must rely upon the virtue of the country, and upon the steady habits and intelligence of its yeomanry, to counteract this influence. I would neither awaken jealousies, nor excite prejudices; yet I am persuaded that it would conduce to the public weal, if each class of our population was represented, in our councils, in proportion to their respective numbers. But this will not be the case while the present disparity in acquired knowledge exists in the professional and laboring classes. Awarding to the first the most honest and patriotic intentions, either their habits, their associations, or their interests, do not always qualify them, or leave them at liberty to consult the best interests of a community, of which they form but an inconsiderable portion. The majority can alone be fairly represented by its own members, whose feelings and interests are identified; and the more intelligence and virtue there is in this majority, the more wisdom and liberality there will be in the acts of our public councils. Not that I would make farmers all orators: but I would endue them with a talent no less useful—that of thinking and judging correctly. Our *talkers* too often compromit themselves upon *ex parte* facts; and become *advocates* to sustain their own errors; while it is the profound *thinkers*, who hear both sides of an argument before they publish their opinions, that we are to rely upon as impartial *umpires*.

It results from the consideration which I have given to this subject—

That an agricultural school will tend greatly to promote improvements in husbandry, and to augment its products;

That the laboring classes are entitled to an equivalent, from the bounty of the state, for the colleges and academies, it has endowed, for the benefit of the learned professions;

That the instruction which it will dispense, in chemistry, mechanics, and the natural sciences—in literature—in practical farming and gardening, and in rural economy generally,—will have a benign influence in enlarging the sphere of useful knowledge—in encouraging industry—in prospering all branches of business—and in augmenting the resources of the state;

That its moral and political influence will be salutary; and that the expense of its establishment will be amply remunerated by the increase of revenue, to say nothing of the enhanced value which it is calculated to confer on real estate.

The foregoing considerations are respectfully submitted, as the honest opinions of one who expects not the remotest benefit from their adoption but in common with his fellow-citizens. I will but add, in conclusion, my ardent hope, that some other pen may be employed more forcibly to illustrate the advantages of an institution, which I have but imperfectly sketched.

B.

NOTE.

* *The Good Oberlin.*—There never was, perhaps, a more happy illustration of the advantages of education and science, in promoting agricultural and moral improvement, than was produced by the labors of this worthy philanthropist and christian. When he assumed the pastoral charge of a district in the mountains of Alsace, he found a people who could neither read nor write; who had no trade, no tools, no agriculture, few comforts, and no access by roads to more cultivated districts. By indefatigable industry and untiring patience, Oberlin surmounted all these difficulties, and rendered his district the wonder and admiration of all. He procured books and tools, taught his parishioners to read and to work, to improve their dwellings and their lands, to construct roads, and to plant trees, which latter he inculcated as a religious duty. He established probably the first infant schools, in about 1790. "Education," says his biographer, "was never in any other place made so general, nor, in many useful respects, carried so far, as by this extraordinary and most exemplary pastor." Oberlin's useful labors excited the notice and the admiration of the capital. Louis XVIII. sent him the ribbon of the Legion of Honor, and the Royal Agricultural Society voted him a gold medal. The quotation at the head of this article exhibits the ground work of his wonderful improvements. He died in 1826.

Diabetes in Horses. By Calro.

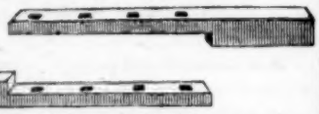
Mr. Editor,—Diabetes is generally considered an incurable disorder, both in men and horses, but if properly treated, I think there is good ground to hope for a cure, especially in young horses. The first object appears to me to divert the overaction from the urinary vessels to the bowels: to effect this, I would recommend to give daily a ball made of gambouge, aloes, and flour, as in a case of costiveness, for eight or ten days; and, at the same time, give an ounce of uva ursi, in powder, morning and evening, mixed with his food, and continued for ten or twenty days. The balls will divert the

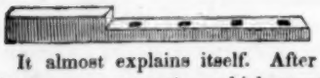
action to the bowels; and the uva ursi will operate to strengthen and give tone to the urinary vessels. If any fever, an ounce of ipecacuanha put into two quarts of warm water, and a pint given daily in his drink, will soon cure the fever. The uva ursi should not be given until the fever is gone. CARLO.

September 3d, 1832.

Expeditious Mode of making Posts for Fences. By [?] To the Editor of the New-York Farmer and American Gardener's Magazine.

SIR,—If an economical and expeditious mode of making posts for fences would be a desideratum to any of your readers, the annexed sketch and explanation are at your service:





It almost explains itself. After you have hewn your post *entire*, which must obviously be from eighteen inches to two feet longer than is required for a single one, saw it half through, at equal distances from each end, but on opposite sides; then split it down the middle, and you have two good posts with a little more than the trouble of one. For post and rail fences, mortice it first, and proceed in the same way.

[?]

[This article was, by mistake, first published in the New-York American.—ED.]

Agricultural Societies, Experimental Farms, and Scientific Schools. By DR. E. H. DIXON. To the Editor of the New-York Farmer.

MR. EDITOR,—It is known to all who read, that much has been said and written by the enlightened and scientific of this and other countries, on the subject of agricultural societies. Indeed, so much has been done as well as talked of, that it may seem at first sight that the subject is exhausted, and that nothing further can be said respecting that which has occupied the heads and engaged the pens of so many, distinguished alike for their sagacity and extensive knowledge of a science so inseparable from the welfare of every country that wishes to preserve its true independence, for in these days it remains not to be proved that the vital existence of a state is based upon her agriculture. This view of the subject, however, can only be entertained by such as have bestowed a hasty and superficial glance upon the multiplied and varied operations of the countless societies that have sprung up—dragged on a half inanimate existence, and eventually departed, in every part of our country. Without entering at length into their plans and arrangements, the writer would premise that he is far, very far, from wishing to detract in the slightest degree from the merits of their truly philosophic founders, or to deprecate the evident benefits that have resulted from them. The good results are evident, and it renders the regret more poignant that, where so much has been done, so much more might have been effected by a more concentrated and judicious application of the same means. The writer thinks, Mr. Editor, and believes he is not alone of the opinion, that the plans and operations of most of them have been too diffuse: the desire to grasp too much has produced in some measure the result that happened to the unfortunate dog in Æsop. I have often thought that a pretty correct estimate might be formed of the number of acres contained in the respective farms of a district, by the degree of culture they exhibited. We all know that in the varied occurrences of every-day life, a thing is well or ill performed in a precise ratio with the degree of interest felt at its successful result and the concentration of our abilities upon it: providing always, we know something about our business, for there will always be found individuals in every community, who are so little in the habit of self-examination that they never question their abilities to perform any thing a weak judgment may suggest, until that stubborn argument, the loss of money, convinces them of their error. These are not likely to appreciate our motives, or to estimate rightly the full meaning of the denunciation against our first parents, "by the sweat of thy brow shalt thou eat bread." We therefore dismiss them, and address ourselves to all thoroughgoing lovers of systematic agriculture. The principal inducement held forth by societies has been premiums, and the awarding of certificates of merit to the successful candidates. Now it must be evident that many of these have been obtained more by chance than by well directed effort. The man who is so unfortunate as to possess a stubborn soil, may be far more deserving than his successful rival. Very few premiums have been offered for the best managed farm. It has generally been for the greatest amount of produce, from a specified quantity of land. This produces its certain result. The man who has the most manure can raise the greatest crop; but this is indeed a sad system of agriculture. It requires but little observation to foretel its result, and rather encourages extravagance than economy in farming.

The fact must be admitted, that both premiums and experience are good, but where the first are only sought by those who cultivate for the express occasion, and the latter viewed and adjudged only by those who are to award the former, the results are mostly confined to a few. The unsuccessful experimentalist either concludes that partiality has been shown, or (perhaps justly) that his rival has been indebted to chance for his success, and hastily abandons that which he concludes can be productive of nothing but disappointment.

The writer has often thought that if a well cultivated field, and a perfectly formed animal, could be selected from various parts of the state, and brought within the compass of an ordinary farm, that a much more durable and stimulating incentive would be offered for the exertion of the beholder. He would immediately inquire by what method of superior culture has this been effected? How is it that I here find an animal vastly superior to any that I possess, notwithstanding all my efforts to improve my stock. Of the truth of the answer which has constantly presented itself to these supposed inquiries, your readers will doubtless entertain their own estimate. The writer cannot help thinking it a want of the knowledge of first principles. It is in agriculture as in all other sciences: a few plain and immutable principles direct the scientific farmer in all his routine of experiment. But these are only to be attained by insensible gradations. When we discover the law we are surprised at its beautiful simplicity, and wonder we did not perceive it before; but so it is that we acquire all our knowledge of the world by which we are surrounded. There must be a beginning. The child knows by experience alone, that fire will burn.

I have said, Mr. Editor, that the doings of the societies were too diffuse. They are indeed so; but the subjects of their awards are not sufficiently so. Experiments that would be productive of the best results are constantly being made in different parts of the country; but perhaps from the circumscribed sphere of observation, of those most interested in them, are entirely unknown, or at most, heard of through the distant medium of hearsay, or at least a journal; and these, alas! have not the extensive circulation they merit. The farmer reads of an experiment. He has, or thinks he has, tried a similar one, and the result has been different.

Inattention to some of the minor operations of culture has perhaps caused that disappointment which he imputes to an incorrect report of the success of others. His crop has not been adapted to the soil—a succulent plant has been put on a meagre, fresh-turned sward—a ploughing has been omitted—his seed has been bad—or in short, something has been done, or left undone, which would not have occurred, could he have referred to the source, and beheld the progress of the mode of culture he wished to adopt. He wishes to improve his stock—hears, perhaps, of the excellence of the Bakewell cattle, or the short-horned Devons—the Southdown, or other excellent varieties of sheep; but alas! he is incredulous, he has not *seen* them. Thus it is for want of primary knowledge the efforts of our farmers are crippled, and their lives spent in their arduous pursuits without a reasonable reward for all their toil and exertion. Now, my dear sir, I would not have troubled you or your readers, did I not think that a most practicable and delightful remedy might be suggested for the improvement of our agriculture; and that is—the establishment of county agricultural societies and experimental farms. Let something be done that will bring the benefits home to the door of every farmer who engages in the praise-worthy attempt to improve his little kingdom, his farm. If he expends a few dollars, let him not lose sight of it, but calculate on a sure return. If he wishes to obtain a superior quality of seed, or a choice variety of fruit—if he would improve the character of his stock, or test an experiment—let him go to "the farm," and there obtain the choicest specimens that can be produced at home or abroad, through the medium of the enlightened superintendant, who is supposed to take all the journals, and to correspond with the intelligent farmers of our own and other countries. Can such an individual be found, and if so, what motive shall be offered him for devoting his time and talents to its management, for a motive there must be, and a sufficient one? That there are such men, I know; but it requires to be proved if the proceeds of the farm would afford a sufficient inducement. This brings me to the most important suggestion I have to make, and I am conscious it must

be mentioned with delicacy. The human mind is but too apt for its own improvement to revolt at any thing that implies inferiority to its fellows. But I will not withhold the expression of honest opinion. It is the duty of every man to advance the standard of mind in his sphere of influence, however limited; like the Romans of old, if a great object is to be effected, let us all bring our jewels, however trifling their intrinsic worth, and cast them into the common treasure. I allude to the want of knowledge of the first principles of their delightful science that the youth of our country labor under.

How much of their manly toil, how much of the sweat of their brows is expended upon the soil they cultivate for want of this knowledge. The rudiments of chemistry, of animal and vegetable physiology, of mechanics—alas! where are they! Why does that noble and industrious young man plough his land superficially, and perhaps with an ill-constructed plough! Why is the very life and soul of his farm, the contents of his barnyard, left exposed to the searching influence of an American sun! Or perhaps, he has removed it to his field, and spread it carefully till the ensuing spring, when he designs to plough it in. There is an orchard, splendid in appearance, but containing what! Perhaps natural fruit, or at best, varieties procured from his neighbor. Does he trim his trees! Perhaps so; look at the irregular and lacerated extremities left by the axe. Various countries of Europe have poured their treasures into the lap of an enlightened neighbor, but he is scarcely aware of it, and if so, ridicules perhaps their whimsical possessor.

But I will say no more. Tell me, however, is the picture true, and need it continue so! I hope not. There is life—there is spirit enough in our county to set the example. There are those who will stand forward, and act, as well as contribute. Ten thousand dollars can be raised—a society organized—and a farm purchased, by the ensuing spring: two or three choice animals can be procured from the collections of our Van Rensselaers, our Buells, our Powells: a professor can be obtained, who will lecture during the winter to our young men: the candid and ingenuous will acknowledge its necessity, and hasten to redeem their precious time: they will drink of the delightful fount of Nature's Knowledge, and receive the sure reward, knowledge—power: they will no longer feel themselves at a loss for amusement, and spend their time in dissipation, but gather up the fleeting moments, and elevate their pursuits to the rank they should occupy in every enlightened country. And now, Mr. Editor, with one more suggestion, I leave the matter with you, trusting that the pens and persons of some of your scientific and patriotic correspondents will stand forth in a cause so delightful, so inspiring to every agriculturist. Delightful idea! that every county should have its farm, its professor and lecturer on the natural sciences. Will a sufficient number of men subscribe twenty-five dollars each, to raise ten or fifteen thousand dollars. This will purchase and stock a farm. Will these and other individuals, then, who wish to elevate their science before the world, agree to pay a superintendant and lecturer a reasonable compensation, to be raised from the produce of the farm and the proceeds of lectures on the sciences to be delivered to subscribers and their sons, during the winter, at a stipulated rate per quarter: suitable apparatus being provided for the illustration of the same. Is it not probable that the benefits to be derived from the interchange of seeds, the use of the improved stock, but, above all, the knowledge to be derived from an acquaintance with the delightful improvements that are constantly making, will cause every subscriber to look back with pleasure upon the day when he subscribed to the Experimental Farm.

I am aware, my dear sir, that these thoughts are hastily thrown together: I have but started anew the subject. In a recent address before the Horticultural Society, Dr. Francis has alluded to it in terms of eloquence suited to its importance. Your superior knowledge and acquaintance with these subjects will enable you to advance many useful hints,—shall we have the pleasure of hearing your sentiments on the subject! It needs a well arranged and minute plan, in order to secure success and harmony in its operations.

E. H. Dixon.

The Sugar Maple and the Manufacture of Sugar. By Lansingburgh.

Mr. Editor,—As an ornamental tree, we have not many that exceeds the maple. Taken in connection with its great utility in the arts, it is rather surprising that it has not received greater attention—that our road sides through the country are not ornamented by it, and our State greatly benefitted, and I might say, enriched by it. The following I select and send for insertion in your paper.

Yours, &c. Lansingburgh.

Virgil celebrates the maple as the throne of Evander, and its branches as the canopy under which he received and seated Æneas.

"On sods of turf he sat the soldiers round
A maple throne, raised higher from the ground,
Received the Trojan Chief, and o'er the bed
A lion's shaggy hide, for ornament, they spread."

Pliny enumerates ten different kinds of maple that were known to the Romans in his time, the timber of some of which was in the highest estimation on account of its fine grain and beautiful veins. It was considered next to the citron wood in value; and we are told that in some instances, when it was finely spotted, it brought its weight in gold. To such a height did the fondness of the Romans for curious wood carry them at one point of their history, that their tables were more expensive than the jewels of their ladies.

The sugar maple enters largely into the forests of the northern States, and grows no where in greater abundance than between the latitude of 46 and 43 degrees, which embrace Canada, New-Brunswick, Nova Scotia, Vermont, New-Hampshire and Maine. In some parts of New-York and Pennsylvania, it is also common and abundant. It was estimated by Dr. Rush, that in the northern parts of these two States there were ten millions of acres containing the sugar maple, at the rate of thirty trees to an acre. In Virginia, the Carolinas, Georgia and Mississippi, it is seldom if ever found.

The sugar maple occupies a more extensive range of American territory, than any other species of this genus. It flourishes best on elevated, and even mountainous situations, and in moist soils, and is often found in company with beach, ash, and birch.

This tree often rises to the height of 70 or 80 feet, though more commonly to 50 or 60.—The great height, extended branches, regular form, rich verdure, and neat appearance of the leaves, render it a most beautiful shade tree, and well deserves to line the side of all our streets throughout the Union.

The wood when first cut is white, but by exposure for a short time, takes a rosy tinge. The grain is fine and close, and when polished, has a silky lustre. It is strong and heavy, but not durable when exposed to the weather.

Two accidental forms are found in some specimens of the sugar maple, which are much valued and sought for by cabinet makers, as they give beauty to their work. The first is *curled maple*, having an undulating form in the grain of the wood: the second, which is found only in old trees in a sound state, is a singular appearance of small radiating spots, more or less thickly interspersed through the wood, and furnishes the material called *bird's-eye* maple. These singular spots are more numerous near the sap than near the heart of the tree.

The cause which produces these singular appearances in this timber has never been satisfactorily explained. Both, however, are beautiful, and if brought from a foreign country, the furniture made from it would be prized as the richest specimens to adorn our parlors.

The sap of the sugar maple furnishes no inconsiderable resource for the economy, the comfort, and even the wealth of our northern citizens; especially to those occupying regions newly settled.

The mode of procuring the sap and forming the sugar is simple, and nearly the same in most places where any is resorted to. The common process to collect the sap is to perforate the tree with an auger in two places about four inches apart, and eighteen or twenty inches from the ground. It is found that a more abundant flow of sap is obtained from a shallow than a deep hole. In these holes two tubes are inserted, which from the direction given to the auger in boring nearly meet at the outer ends. The tubes are made of elder, sumac or other shrubs with a large pith, and conduct the sap into small troughs or buckets, from which it is conveyed to the camp, or the place where the temporary preparations are made for boiling, &c. These preparations are little more than a boiler, containing from fifteen to fifty gallons, suspended upon a bar supported by crotches, at a convenient distance from the ground for building the fire; moulds to receive the syrup when of a sufficient consistency to form into cakes; and an axe for preparing the fuel.

The evaporation is carried on by a constant and a brisk boiling of the sap, which is frequently replenished as the bulk is diminished, until a syrup is formed of sufficient strength to become solid as it cools. A scum which is constantly rising to the surface during the first part of the process is frequently removed, and before the syrup is left to cool and harden, it is strained through woollen cloth to separate the remaining impurities. The time for stopping the evaporation is determined by rubbing a drop of the syrup between the fingers, which will granulate if the process has been carried to a sufficient length. When the ebullition is so violent as to give signs of rising over the sides of the boiler, it is quelled by a piece of lard, butter, or rind of pork.

Maple molasses is made by discontinuing the evaporation before the liquid is of sufficient consistency to consolidate by cooling, and by the draining from the syrup as it forms into sugar. Sugar of the finest character and grain may be formed from the sap of the maple, and though the more common kind is neither very white, nor very delicate, it has a peculiar flavor, much admired by those not accustomed to its use.

The time for collecting the sap is about the last of February, and continues from four to six weeks; after which the liquor is less abundant, and less rich in the saccharine principle, and is finally so weak, that it can no longer be reduced to sugar. The tree gives the most abundant discharge of its sap early in the season, and in clear, pleasant days, preceded by cold frosty nights.

Agricultural and Horticultural Memoranda, for 1832, in the county of Albany. By B.—[For the New-York Farmer.]

The last winter was remarkable for the long continuance of severe cold weather. During nearly fifty successive days the thermometer scarcely rose above the freezing point. Its influence was unprecedently severe upon fruit trees, destroying thousands, and seriously injuring the fruit buds of many which survived. Our peach, plum, and pear crops were consequently trifling; yet of apples there has been an ordinary yield, and cider is abundant at fair prices. As the severe cold was preceded by mild weather, and snow, the ground was not frozen when it set in; and the sap vessels were, consequently, distended with sap. The cold was so sudden and severe, that it is believed the sap froze ere its volume was diminished, and that the expanding influence of the frost burst the vessels asunder. In many instances, where the trees were of some size, the injury extended only to the vessels of the descending sap, and this sometimes only on one side of the bole; while in other cases the sap vessels in the alburnum appeared to be ruptured, and the upper part of the tree wholly destroyed. I had several trees which put forth their foliage, bore fruit, and appeared to be healthy till towards autumn, when their leaves became yellow, and prematurely fell. On examination, I found a ring, of bark about where the surface of the snow had lain, completely dead and separated from the trunk. The fruits which suffered most, were the peach, plum, pear, cherry, and quince. What renders the cause of this evil the more inexplicable, are the facts, that many tender trees, as the atalanthus, catalpa, &c. which drop their foliage, and probably assume their winter habits early, suffered less than in ordinary winters; and that the injury to plants was far less severe upon clay than upon sand soils. The only preventive that suggests, against like evils, is to keep the snow from about fruit trees till the ground is thoroughly frozen. The cold was as intense in the valley of the Mississippi, in Tennessee, Illinois, &c. as on the Hudson, though its duration was short.

Wheat suffered less from the winter than was apprehended. The crop has been a fair one, and the quality of the grain good. This staple I am afraid will continue to diminish in quantity among us, till we adopt a better system of manuring, and appreciate, more correctly, the utility of a rotation of crops. This grain exhausts an ordinary soil of what I term its specific food; or, according to Lindley and Macaire, deposits a poison, which unfits the soil for another crop, until the specific food is restored, or the poison taken up by other crops. One of the elements of wheat, nitrogen, is seldom found in other plants. This must consequently be present in a wheat soil, and is not selected or retained by other crops.

Rye has been rather light in yield, and the grain inferior to that of common seasons.—There is a manifest difference in the sorts of this grain, the white yielding the most flour and of superior quality.

Barley.—From the high price which this grain commanded last winter, large quantities were sown, and the crop has been more than a medium one. Although the price has greatly fallen, yet I think upon our soils it still pays better than wheat. It exhausts less, and yields upon light loams about double the quantity that wheat does.

Corn, the farmer's main dependence for kitchen, barn, and sty, promised very unfavorably, but finally turned out pretty well, where it escaped the early frosts, which in some districts did great injury. The wet spring did not admit of early planting, and the summer being backward, it was much later in coming to maturity than usual. There are two maxims which my experience in the culture of this crop has suggested, which I venture to recommend. One is, to plant only on manured, warm and well drained grounds. The other, to cut and stack the whole crop as soon as the grain is well glazed. An observance of the first has insured me good crops; while the second has ever saved them from the effects of autumnal frosts, and materially increased my stock of fodder. There is another suggestion which I will make in regard to this crop, and that is, to plant double the quantity of seed usually put in the ground, and to reduce the plants at the first hoeing, which will ensure a full compliment of stalks in each hill. This is seldom the case in a field of corn. If we allow four to be a proper number, we shall find in most cases that there is a deficiency of one fourth, and often a half, of corn-bearing stalks in a field. There are always more or less feeble or sickly plants, that never produce grain. These may be distinguished and thrown out in the weeding process. Few farmers appreciate the advantage of close planting, wher the habits of the grain, and the strength of the ground will admit of it. It is common to plant here at the distanee of three feet each way. I put my hills at 3 by 2½. At the south, and east, it is usual to plant at four, five and six feet. The following exhibits the difference in the number of hills, and consequently in the products of the different modes:

An acre planted	6 by 6 ft.	will give in hills,		1,210
"	" 5 by 5	"	"	1,742
"	" 4 by 4	"	"	2,722
"	" 3 by 3	"	"	4,840
"	" 3 by 2½	"	"	5,808

By this scale it appears that if the product at 4 feet would be 27 bushels, at 3 feet it would be 48, and at 3 by 2½ 58 bushels, or more than double the first; while the product of 5 feet would be to that of 3 by 2½, nearly in the diminutive ratio, as of *one* to *three and a half*, or about two sevenths. In September, I measured 33 feet square in the best part of my corn-field, (4 rods) which embraced 11 rows one way and 13 hills the other, and contained 143 hills and 572 stalks. The corn was picked, husked, and after rejecting some half a dozen smutty ears, carefully weighed. Its weight was 232½ lbs. A seventh part of this product (33 lbs. 2 oz.) was immediately shelled, and the grain found to weigh 23 lbs. 7 oz. This at 60 lbs. to the bushel, gave at the rate of 109 bushels per acre. The indication, by measurement, was still higher, the memorandum of which I have mislaid.

Potatoes have been a bad crop, particularly on moist ground, where they generally do best. Those early planted were far the best.

The summer having been wet, *oats* are pretty abundant and heavy. The increased consumption of this grain, however, has sustained the prices above those of ordinary years.

Hay has been more than an ordinary crop, though it is to be observed, that the superiority was principally manifest in recently stocked grounds. Old meadows were rather light. The experience of some years would seem to strengthen the opinion, that the practice of keeping grounds in perpetual meadow is manifestly bad, so far at least as regards profit. Grasses do, and will alternate; the cultivated or more productive kinds will run out; coarse kinds and mosses will come in; the sole of the grass will become tough and thick, and less sensitive to the influence of heat, air, and the other agents of vegetable nutrition. Meadows begin to deteriorate generally the third or fourth year after they are laid down, and by the sixth their product is often diminished to one half, or one third of a full crop. New meadows ought to average three tons of hay per acre. Old ones seldom exceed half this quantity.

The productions of the *garden* have been abundant, with partial exceptions. On account of the backward season, which retarded vegetation two weeks later than usual, the grape did not ripen well, nor exhibit its usual richness; and the hardier kinds which were left uncovered, suffered much from the winter. Sulphur is successfully applied, in a dry state, to this fruit, about Boston, to prevent mildew. Melons and other vines came on later, and the crop was inferior in product and quality.

On the whole, the season has been propitious, and affords abundant cause for gratitude and thanksgiving to the beneficent God of the harvest. B.

Rearing of Sheep and Lambs, particularly the Merino Breeds. By MR. S. LYMAN. To the Editor of the New-York Farmer.

GOSHEN, CONN. October, 1832.

SIR,—I have had the pleasure of seeing several numbers of the "New York Farmer and Horticultural Repository," and I am much pleased with the design and execution; I am likewise gratified with seeing the recent establishment of the New York State Agricultural Society; it cannot fail of being extensively useful, as your object is not only to stimulate farmers to use the best means to improve their lands, and obtain the best stock, but to give the public the benefit of their experience and success.

A writer in the March number, speaking of the rearing of sheep and lambs, requests every Farmer who has had good success to trace the cause and make it known to the public. It has been a part of my business for the last twenty-five years, to raise sheep, particularly the Merino and Saxony breed.

As my success has been far beyond my expectation, I am induced to think myself fortunate in hitting upon the cause.

My practice during the summer months, is to give my flocks a sufficiency of pasture to keep them in good heart, but not to have them become fat. To do this, I find it best to change them once in twelve or fifteen days, keeping the feed short but fresh, and frequently salt them. In the month of October lessen the flocks, so as not to have more than fifty or sixty together;

put them into pastures reserved for the purpose, where the feed is rather better than where they have been kept. By this means they will soon begin to gain, so by the beginning of winter they will be in a thriving condition; then, by plenty of good hay and water, continuing the salting when the weather is moderate, I have been able to keep them in good condition. Two or three weeks before yeaning time, they ought to have plenty of rowen hay; if this cannot be had, let them have the best of English or clover hay, and be fed with turnips or potatoes three or four times a week, and they will usually have plenty of milk, which I consider the *great secret* of raising lambs. Agriculturists know that ewes go with young about one hundred and fifty days. When the time comes for them to yean, they require the strictest attention. They must be kept in warm places, well littered, and the lambs assisted to suck as soon as they can stand; any further assistance is rarely necessary, provided the ewes own their lambs, but this is not always the case. Some ewes will have their lambs and take no further notice of them; if so, they must be put together in small pens, the ewes tied, and the lambs assisted often to suck; in a few days the ewes will be fond of them, when they may be untied, and there is no further trouble. I think it important to have sheds, open on one side, that the sheep may go under during storms or very cold weather. Always keep the yards well littered, and in this way they make large quantities of manure.

I do not think it best for them to ramble much after the winter sets in, and it becomes necessary to feed them, for it seems to take away their relish for hay, and they will most surely lose flesh. I have thus given an outline of my plan, I will now state the result of my success. I have repeatedly raised one hundred lambs without losing one; and one year I raised one hundred and sixty, and no ewe that had a lamb failed rearing it.

In a few cases ewes lost their lambs, and twin lambs were substituted in their places. The ewe was made to receive the lamb by rubbing the dead lamb all over it, and tying the ewe in a small pen, often assisting the lamb to suck, and a few days will be sufficient to make her receive it as her own. If you think these remarks are worthy a place in your paper they are at your disposal. Yours, &c. S. Lyman.

Remarks on the Economy of Peat as Fuel, and the Ashes as Manure, particularly in Reference to the Poor. By T. Bridgeman, Florist and Seedsman. To the Editor and Proprietor of the New-York Farmer and American Gardener's Magazine:

Gentlemen,—I am constrained to offer my congratulations to the Farmers and Gardeners of our country, on the prospect of their being furnished with a periodical publication calculated to exhibit to the attentive reader a fund of information on subjects which are constantly gaining proselytes; and from the circumstance of your having introduced into your specimen number, articles on a variety of subjects, I shall be induced to become a more regular correspondent.

The subject on which I am about to treat appears to me to be one of the utmost importance to the Farmer, as well as to the community at large. It must be acknowledged, that although this country contains an abundance of wood, coal, and peat, as well as almost every other description of fuel, that the poor of our large cities, in general, suffer greatly from cold; and if all the tales of woe could be sounded in the ears of a sympathizing community during our severe winter, I am persuaded it would arouse them to the consideration of a remedy. It is an acknowledged fact, that the poor of Europe are cheaper and better supplied with fuel than those of this country. This arises in a great measure from the circumstance of ashes being held in high estimation by Agriculturists; they are consequently a saleable article in their large towns and cities, at a price equal in some instances to half the cost of a winter's fuel.

In the third edition of a book I published last Spring, entitled "The Young Gardener's Assistant," I endeavored to stimulate the public to a consideration of this subject; and being convinced of its importance, I beg leave to introduce the following paragraph from page 178 of that work, as being calculated to exhibit the subject in its most important bearings.

"Although our limits will not allow of a further description of the various sorts of insects which injure our gardens, and frequently destroy the first fruits of our labor, I cannot forbear directing the attention of our citizens to the importance of saving all kinds of ashes. If all agriculturists and horticulturists were to offer an inducement to the inhabitants of large cities to save their ashes, *in a dry state*, they would be supplied not only with a valuable manure, but an antidote for many kinds of insects; and our citizens would be at less risk from fire, by having a brick vault on the premises for safe keeping them. In England, a private dwelling is not considered complete without an ash vault, and a good farmer would dispense with his barn, rather than be destitute of an ash-house. I have known farmers supply the cottagers with as much peat as they could burn, on condition of their saving them the ashes; and there are some that will keep men under pay throughout the year, burning peat for the same purpose; and any thing that has passed the fire is so valuable, that a chimney-sweep will frequently clean chimneys for the sake of the soot, which is conveyed miles into the country, and sold at a price sufficient to reward the collector, besides paying all expenses; even the house-keeper's ashes in cities is a marketable article at all times, at from ten to twenty-five cents per bushel, *when kept dry and clean*, and a guinea a load (equal to 85) was formerly the common price in the villages of Berkshire and Hampshire."

Now I would ask, how it is that ashes are not as valuable to the farmers here, as they are in Europe. The extreme heat of the summers must certainly engender insects in equal if not greater proportions; and as respects manure, it must be scarcer in some parts of this extensive country, than it is in the dense populated countries of Europe. Perhaps some may answer that ashes are already used by our cultivators to a considerable extent; but I would remind such, that from the circumstance of their being mixed up with other manures and exposed to all sorts of weather, (as in our city,) they loose their virtue, so that a load may not be worth more than a bushel would be, *if kept dry and clean*. The farmers of Europe consider peat ashes of more value than any others, and I am persuaded that could they be fairly tested by some of our best cultivators, great good may result to the community. If the farmers of England can afford to keep men under pay, perpetually burning peat for the sake of the ashes, it is natural to suppose that the poor of our community may be placed in easier circumstances as respects the article of fuel. Thousands of acres of land are to be found in the States of New-York and New-Jersey, and within a few miles of this city, which abound with peat earth; and the owners of such have already began to explore their treasures of this description. Good peat is now to be had in the city at the low price of eight cents per bushel, or three dollars per chaldron. It burns well in all sorts of stoves, and grates, whether made for wood or coal, and also on the hearth; and if the ashes are not used to any better purpose than other ashes have hitherto been, it is the cheapest fuel known. I am persuaded that this subject is worthy of serious consideration, and if the editors of the different papers would arouse the public attention so as to enlist some of our most active citizens to a consideration of the subject, incalculable good may result to the community at large.

If the honourable the Corporation of our city, and others who distribute fuel amongst the poor, gratis, would give them peat instead of wood, it would be much cheaper, and would answer every purpose to the consumers. In such cases twelve bushels may be given in the first winter month to each of the applicants, instead of wood, with a strict injunction that they save the ashes in a dry state, in order to their being taken in exchange for a future supply of peat. It could easily be ascertained how much ashes twelve bushels of peat would make, and if a strict attention be paid to the conditions of exchange, it would soon be discovered which of the applicants was most entitled to the distributor's bounty. The same sheds which it would be necessary to provide for housing the peat, could be used as a deposit for the ashes.—If such sheds be conveniently constructed to hold each a moderate quantity, the first which is emptied of peat may be filled with the first ashes that are returned in exchange for a future supply of fuel, and they could be all used for the same purpose as they become empty. These ashes when fairly tested, may become a merchantable article, as in Europe; and it is very probable that farmers may be induced to take them in exchange for future supplies of peat; they could, however, be conveyed into the country at a trifling expense, and would no doubt meet a ready sale.

I am persuaded, Mr. Editor, if you should succeed in arousing the public to a consideration of this important subject, that your periodical will be viewed as a public blessing; which, like railroads and canals, open channels calculated to extend our intercourse, and thereby promote the general interest and happiness of the inhabitants of this highly favored country.

Yours, most respectfully,

Thomas Bridgeman.

Bowery Road, December, 1832.

Abridged Translations from the Annals of the Horticultural Institute, of Fromont. By THE EDITOR.

In the April numbers of this periodical we find an excellent article on the propagation of fruit trees by seed, read before the Royal and Central Society of Agriculture, by M. J. Saint Hilaire. We can give only a very abridged translation. His confrater, M. Sargent, sowed a great number of seeds of good pears, apples, plums, &c. Having occasion to remove his residence he transplanted his nursery trees. In some instances they were transplanted several times before receiving their final location. The fruit from these young trees, that had been transplanted, was very considerably and decidedly superior to their original. This, our readers will recollect, and as St. Hilaire states, is a result contrary to the doctrine taught by all authors. The universally received opinion is, that fruit thus raised degenerates. In confirmatiou of this opinion, he quotes many authors, from Virgil to those of the present day. Duhamel says, "seeds are the natural and most common method of multiplying trees, and the only one by which they diversify their kinds; but fruit trees thus raised, ordinarily produce degenerate fruit, or wild kinds where fruit is austere and disagreeable, more suitable for the food of animals than nourishment of men." The object of St. Hilaire's communication is to ascertain whether fruit trees from seed sown in a nursery, and then transplanted into a good soil and carefully cultivated, have a greater tendency to degenerate or improve. Agreeably to his suggestions, the Royal and Central Society of Agriculture have offered a premium of one thousand francs, to be awarded in 1848, for the determination of this subject.

A correspondent from Algiers states that a short period will elapse ere France will be indemnified, having a colony in Africa productive of cotton, indigo, silk and oil.

An anonymous article states that ashes from turf is worth three times as much as those from wood, and that American cultivators use about fifteen bushels to the acre—on cold lands highly recommended. We are not aware that these ashes are extensively used in this country,

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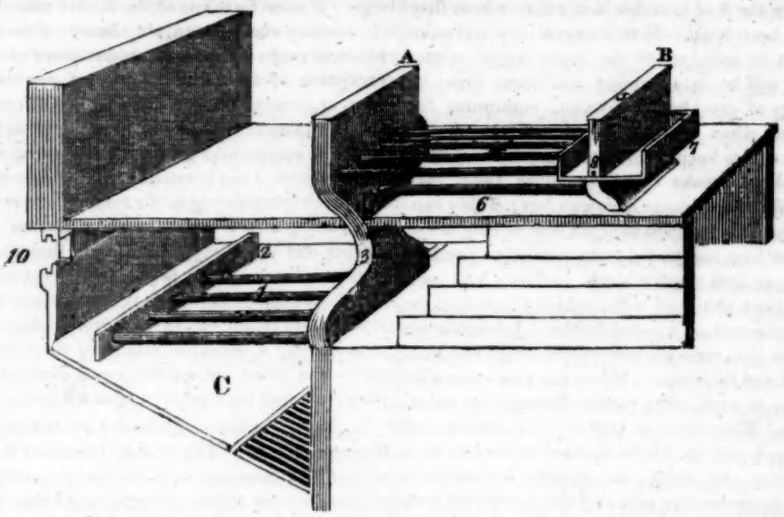
Importance of noting and publishing Facts that occur in Farming Operations. By A SUBSCRIBER. To the Editor of the New-York Farmer.

SIR,—From the circumstance that but comparatively few expeiments in the vegetable or animal kingdom can be so fully and completely made as to establish a truth in less than several and often many years, it is of great importance that every farmer should not only note down, but publish every thing that appears to illustrate a doubtful subject, or that is not in accordance with received opinion. And indeed, not only such things, but many of the phenomena of nature that are familiar to all, and of common occurrence. If farmers would write for the press more, they would become more frequent and close observers of nature, and thus do much to advance agriculture and general science. They should remember that Newton, by meditating on so common an occurrence as the falling of an apple, was led to the discovery of the most sublime truths and laws of the material world.

Yours, &c. A SUBSCRIBER.

Newburgh, Dec. 1832.

EXPERIMENTS IN HEATING BY HOT WATER.



Heating Green-Houses and Dwellings by Hot Water. By Mr. M. SAUL, Florist. To the Editor of the New-York Farmer:

SIR,—I herewith send you my plan for heating by hot water. To save time and room, I have sent part of the London Mechanic's Magazine, which was published May 19, so that you may select what part you think proper, and the above plan I have drawn expressly for your work, which will be of greater power than the one in the Mechanic's Magazine, or Gardener's Magazine. Whether the hot water system is in use in America, I know not; but the following plan will well repay the expense. The fire-place is on the same principle as Witty's Improved Furnace in the Gardener's Magazine, volume 7th, page 482. It is founded on the modern discoveries in chemistry, and forms so beautiful an instance of the application of scientific principle to the useful arts that I shall attempt to give your readers an idea of it. Coal, when dry, if submitted to distillation, or in other words exposed to greater heat, emits a large quantity of aqueous vapor and inflammable gas and becomes coke, which consists, when the coal is pure, almost entirely of carbonaceous matter. My fire-place is an inclined plane and terminated by a grate, and I also find that it is of no consequence whether the grate is fixed or moveable, like Witty's.

As the fire begins to burn at the lower end, and which is supported by air admitted through the grate, the coal, while it lies on the under surface of the inclined plane, and before it reaches the grate, undergoes a dry distillation, and the steam and gas which are thus expelled, occupy the space above the coal. At the same time the coal which has already undergone this process, and in the shape of coke has reached the grate, is burning, and the air which passes through this coke fire, heats to a very high temperature, sweeps over the surface of the unburnt coal, or the inclined plane, and inflames all the gas as it is evolved. Thus the gaseous matters evolved from the coal are converted by combustion into gaseous vapors, thereby forming steam, and carried off through the flues, which are connected, diffusing heat wherever it is required without being accompanied with a single particle of smoke, which is a great advantage to hot-house plants. Wood might be burnt in this fire-place the same as coal.

My plan of increasing the heat by the same fire, is on the same principle of a locomotive steam engine, which is, I have found to be, very great, having no boiler or cistern, but tubes in the fire, which is the reason our Liverpool railway carriages have such great power.

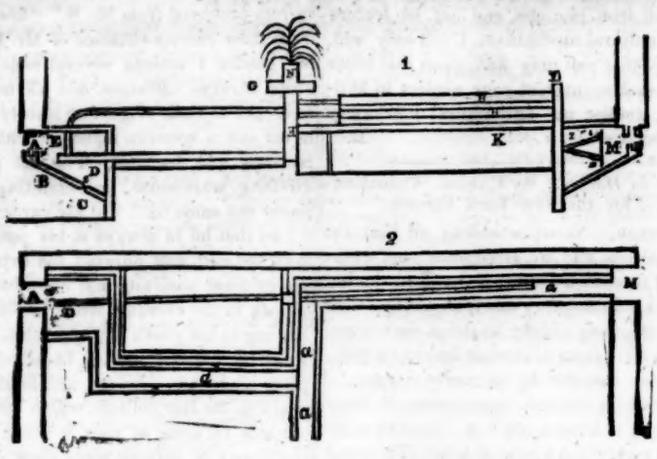
References.—1, the tubes, 21 inches long, 1¼ inches inside—these tubes put the water in motion as soon as the fire is kindled; 2, supports the tubes; 3, the conductor through the top of the flue; 4, the upper pipes for the hot water, which is carried forward with great power to 5, and returns through the pipe, 6, which is about 3 inches inside—the upper pipes are only 1 inch inside; 7, the reservoir, for supplying the waste—it supplies itself by a small aperture at 8—a loose plug is fixed so that the water gets in, and prevents the whole force of the hot water entering the reservoir, which would cause too great a steam in the house—by the stroke, as described in the other plan, I have removed one end of the reservoir, to show the place where it supplies the pipes, at 8; I have removed the brick-work at the side of the fire to show the tubes; 10, there is a sliding door for feeding the fire, as described in the other plan; C is the fire-place, also described in the other plan; A B, to be considered as running all the length of the front flue.

You will not perhaps have seen in the Gardener's Magazine a plan of a hot water cistern being fixed on the top of the flue; you will therefore select what part of this communication you think proper, as you will have observed in the last number of the Gardener's Magazine a notice of Perkins' mode of heating by hot water, and I suppose you will have a description of it in the next number for June: so that you may judge for yourself. I wrote to Mr. Loudon to wish him to furnish me with the time it took in getting the water to the boiling point in Perkins' mode of heating, so that I might judge fairly of it, as I have got a drawing of Perkins' which appears to me not so good as Mr. Loudon thinks of it.

I remain, yours, &c. M. SAUL.

Lancaster, England, May 29, 1832.

The following is the article to which Mr. Saul refers, as having been published in the Mechanics' Magazine.—[ED.]



Dear Sir,—Having not yet met with any published statements of the time it takes, according to any of the plans of heating by means of hot water now in vogue, to raise water to the boiling point at different distances from the fire, I send you the details of some experiments made with that view, which I hope you will think of interest enough to deserve a place in the Mechanics' Magazine.

But first let me describe the apparatus made use of. Fig. 1, of the prefixed sketches, is a section of the apparatus; and fig. 2, a plan of the hot-house in which it is erected. A is a sliding door through which the fire is fed; B, an inclined plane of cast-iron, 2 feet 6 inches long by 15 inches broad; C, the grate 15 inches by 12. I find that it is of no consequence whether the grate is fixed or movable; as the fire burns at the lower end of the incline, the ashes fall through an aperture at *e* and more fresh coal descends by its own weight, an arrangement which is attended with the advantage of causing a great part of the smoke to be consumed, that is, converted into heat. D, is a transmission-pipe, which proceeds from the back of the furnace, and passes under a bark-pit —inside diameter three inches; E, the return-pipe—inside diameter 1 inch; F, the supply-pipe—inside diameter 2½ inches by 4½ inches; and G, the reservoir. So far I have described but one wing of the apparatus. At the other end of the building opposite to A, there is a second fire-place, M, the heat from which is conveyed by two tubes, 12, into a vertical pipe, L, from which two horizontal pipes, H H, pass to the central supply pipe, F. In the plan, fig. 2, *aaa*, are flues, which run into the base-wall.

The object of having two fire-places was, however, merely tentative; and the reader will understand that in the following experiments there was only one fire burning at once. I may observe, by the way, that there is a very curious difference in the effects produced by the two fires. When the fire, M, is burning, the water makes a regular stroke of about 6 inches, like a piston of a steam engine. I have allowed room for that stroke in the extra space 3 of the pipe, L, which is closed at top; but lest the stroke should by any sudden increase require greater scope, the pipe, N, is left open at top, and the water rising through it in a jet, falls back into the general reservoir, G. Nothing of this kind, however, takes place when the fire, A, is burning; there is no stroke. Perhaps some of your readers can explain the cause of this difference.

The first experiments which I shall proceed to relate were made on the evening of the 15th of April last with the fire, M. There had been no fire lighted during the day. The fire was set at 7 o'clock, when the water was found by the thermometer to be at 83° at F, which is 12 feet distant from the fire. When 20 minutes had elapsed, the heat was found to have increased to 120°. Every 5 minutes afterwards the heat was again taken, and the following results obtained:

20 minutes	120°
25	132
30	150
35	170
40	188
45	212

On the following evening (16th of April) we tried the apparatus with the fire, A, in the same way and obtained the following results:—

20 minutes	132°
25	140
30	158
35	164
40	174
45	188
50	212

On the 27th of April, we made another set of experiments. At half-past 6 in the evening the fire was kindled with a few shavings and chips, and 10 lbs. of coal. The mercury in the thermometer placed in the centre of the house stood at 64°; when inserted in the water at F, it rose to 71°. The progress of the heating was tried during every 5 minutes, and the following are the results:

In 5 minutes	71°
10	78
15	85
20	91
25	104
30	128
35	138
40	144
45	154
50	175
55	188
60	212

A cold north wind was blowing at the time, and next morning I found the glass hung up in the house standing at 60°.

I hope any of your correspondents who have made similar experiments, or who may hereafter have an opportunity of making them, will favor you with some accounts of them; and I should be particularly glad to learn what time it takes to get water to a boiling heat by means of Mr. Perkins' new boiler, at a distance of 12 feet from the fire.

I am, dear Sir, yours, &c. M. Saul.

Lancaster, May 3, 1832.

On Farriery. By Carlo.

Mr. Editor,—There are few subjects on which farmers generally are more at a loss than in Farriery. The medication of their horses and cattle is frequently done under the direction of men utterly incompetent to advise, or books the prescriptions of which are calculated to kill more than to cure. No department, therefore, of an Agricultural paper seems to me more important than this; and it is my intention to give such views of the more common complaints of horses and cattle as appear to me important, hoping they will be useful in this department of the Domestic Economy. In most cases of fever, I hold that depletion is the most proper remedy; that bleeding and purging, with a view to reduce the system, are the first obvious remedies; that, after the fever has entirely subsided, and not till then, a tonic or restorative course may be resorted to with advantage; that most glandular affections originate in an indirection of the bile; that to obviate them, it is of prime necessity to lead the bile into the bowels, believing that, so long as the bile continues healthy and flows regularly into the bowels, they are rarely, if ever disordered, but when it is suspended or diffused into the circulation, the most alarming disorders ensue. With these views of the subject, I propose to make some communications, and hope they may not be wholly without their use. Carlo.

Barn-Yard and Hog-Pen. By L. T. To the Editor of the New-York Farmer and American Gardener's Magazine.

Sir,—My father, whose farm I inherited and took possession of two years ago, had his hog-stye detached from his barn yard. Immediately on entering upon the farm, I removed my pen by inclosing a portion of the barn yard. I keep my stye well littered with straw, leaves, weeds, soil from the woods, and meadow earth obtained from ditching, by carting, together with that put into the yard, from two to ten loads per week. I sometimes put a few handfuls of rye in different places in the yard, and let in hogs. Feeding them thus for a few days, they completely stir up and commute the contents of the yard. I am confident that I make four times the quantity of manure that my father did, and with no increase in number of stock—and of a better quality too, comparatively none of its strength being washed away by the rains, and evaporated by the sun. My farm consists of near seventy acres, principally in tillage. I am confident that I shall, in the course of time, get it all in a high state of cultivation without laying out any money in the purchase of manure. L. T.

To Catch Moles.—Many methods are recommended to destroy this troublesome intruder; but a good way, in the want of a better one, is when observing a fresh indication, to remain perfectly still for a short time. The little fellow will soon begin to stir the ground. By a sudden jump and heavy stamp with the foot to close his retreat, he may be taken or killed, if a hoe or an old axe previously provided, is used with dexterity and expedition.

Congratulations and suggestions relative to the New-York Farmer and American Gardener's Magazine. By E. SAYRES, Florist and Landscape Gardener.

MR. EDITOR,—It is with much pleasure I have read the specimen number of the "New-York York Farmer and American Gardener's Magazine," which appears to contain much scientific and useful matter in its present improved form, and enlarged size, *especially* in relation to the great improvements of the present system of steam carriage by locomotion; all which will, doubtless, render your magazine both interesting and useful to your many enterprising subscribers: and throw many useful hints to the horticulturist, whereby to improve in the process of heating forcing-houses, green-houses, &c. It would be presumptuous in me to point out the great utility of your useful magazine to young gardeners, and indeed the practical horticulturist, who, it is hoped, will *patronize*, and communicate many useful documents to your laudable publication.

Permit me to hope you will so extensively circulate your publication, as to receive from various parts of the United States, and other countries, the progress and state of horticulture *monthly*, whereby all parties may be benefitted by perusing the apparent difference of vegetations at the same period.

With a sincere hope your Magazine will meet a liberal patronage, I am, truly, yours,

E. SAYRES.

Advantages and Durability of Wrought Iron Ploughs. By B. To the Editor of the New-York Farmer, and American Gardener's Magazine.

SIR—Loudon tells us, in his Magazine for October, that these ploughs have in Scotland almost everywhere been substituted for wooden ones; and the saving is considered great, on account of their extreme durability. They have been introduced twenty-six years, and there is not an instance of one of them being worn out. I have had one in use two years, and think I studied economy, although I paid for it $28. The draft is about the same as that of an ordinary wooden plough, and its work equal to the best, particularly on a sod. It has an almost indispensable appendage, too seldom seen to wooden ploughs—what is technically termed a *bridle*, by which the depth and width of the furrow slice is graduated at pleasure.—Every farmer appreciates the importance of a plough running flat, or, in other words, of pitching neither upon the point or heel, when at work; yet few are aware, that a knowledge of a simple principle of mechanics will enable them readily to adjust it, in this respect, principally by means of a well constructed bridle. The *line of traction* is that which passes from the *point of draft*, or that point of the yoke or collar to which the chain and traces are affixed, when the cattle are exerting their power, to the *point of resistance*, that is, the point of the stock or share. This should be a straight line, *passing through the bridle*. If the bridle, to which the chain or whiffle-tree is attached, is above this line, the end of the beam is necessarily depressed, and the plough runs upon the point or sock; and if it is below, the same tendency is exerted to throw the plough upon the heel. But as I sat down merely to recommend iron ploughs, and not to lecture upon agricultural mechanism, I will only add, Mr. Editor, that you may find, upon this latter subject, much to interest your readers in Williamson's treatise on agricultural machinery and implements. B.

Founders in Horses. By CARLO. Communicated for the New-York Farmer.

MR. EDITOR,—Notwithstanding all that the Rev. Mr. Deane and Mr. Hind have said on the subject of founders, I am still inclined to believe it is an inflammatory disorder, and that their observations apply chiefly to those consequences which arise from neglect or improper treatment of the disorder in its early stages. I would advise on the first appearance of fever, to take away at least a quart of blood from the neck, and give half a pound of salts. The bleeding and physic should be repeated daily for three days. I consider it better to repeat than to draw too much blood at once, and so of the physic. If the depleting treatment be managed correctly, we shall seldom be troubled with suppuration, loss of the hoof, or any of the symptoms described by Mr. Hind. If the system is properly reduced, the fever will disappear, and none of the after symptoms occur; and in this disorder, as in most others, I hold that an ounce of prevention is worth a pound of cure. Yours, CARLO.

September 4th, 1832.

The Properties of Vegetables reciprocally affected through Agency of the Roots. By MR. THOMAS BRIDGEMAN, Florist and Seedsman.

MR. EDITOR,—Being convinced of the importance of the subject treated of in the October number of your last volume, page 348, in an article entitled "Mixture of Seeds and Vegetables," communicated by a correspondent who denominates himself "the Old Man," and considering as I do, that your correspondent R. M. W. in his article, page 396 of the November number, would have shown greater deference to "the Old Man's" assertions, had he known his real character, I take the liberty of offering a few observations founded on facts, which may serve to throw some additional lights on the subject.

Before I proceed, I would state that I am personally acquainted with the writer of the former article, and that he is truly an *old man*, having seen upwards of four-score winters. He has moreover been a practical gardener and seed grower for nearly half a century; and I can assure R. M. W. that he sets too high a value on his reputation for truth and veracity to assert any thing which he has not proved to be correct.

In the beginning of November last I had an interview with the venerable *old man*, and heard from his own lips a rehearsal of the facts before recorded. On entering his premises I was struck with amazement at the order in which every thing is kept. He is truly a business man, having a place for every thing, and every thing in its place. All his seeds, plants, &c. were labelled by his own hands, and the results of all his experiments noted. As respects the article of carrot seed, I saw several clusters extended from the ceiling by twine to dry, all labelled. On examining some of them, I found them marked, "first ripe heads from two orange carrots procured from Mr. S." "first ripe heads from three carrots obtained of Mr. D." &c. In his garden I noticed several beds of carrots, beets, turnips, cabbages, &c. all marked, with reference to their origin and history. In fact, I never saw a concern managed with such correctness and decision. The old gentleman's dwelling, warehouse, and counting-house, are under the same roof, and his garden surrounds it; so that he is always at his post. He rises with the sun, and pursues his avocation with the greatest assiduity and attention until nine o'clock in the evening, when he retires to rest. Having in his youth imbibed habits of industry, sobriety, and temperance, he is truly an exemplary character. As the article alluded to appears in the last volume, which may not be attainable by some of your readers, I shall take the liberty of making some short extracts. In the last paragraph the writer very justly remarks that "vegetables constitute a great portion of human sustenance, and that all means and facts calculated to effect their purity and goodness, must be considered of high account." He therefore made known the result of his experiments and observations, in order to stimulate us to aim at greater perfection of seeds and vegetables. He candidly informs us that his opinion had been conformable to the general belief, viz: "that vegetables and seeds would not mix in their growth otherwise than by standing too near each other when in their flowing state; until by *close attention to the subject*, he found that vegetables of *the same class* were capable of mixture as well by their roots as by their flowers." The old gentleman. after endeavoring to account for his novel discovery, by some ingenious remarks, observes that, "the economy of nature is wonderful; and that we can do but little more than witness her operations and record the facts."

Thine is a glorious volume, Nature! each
Line, leaf, and page, are filled with living lore;
Wisdom more pure than sage could ever teach,
And all philosophy's divinest store;
Rich lessons rise where'er thy tracks are trod—
The book of Nature is the book of God.

The facts which I now offer appear to me to be equally as mysterious as those stated by my worthy friend. About seven years ago I planted two pounds of carrot seed; from which I obtained several thousand very handsome roots; although there were a few lemon colored among them, they were, on the whole, a very superior lot of carrots. Being desirous of raising some good seed the year following, I was careful in assorting them, reserving only such as were of good shape and true orange color. In the spring following the reserved roots underwent another assorting, and nothing was planted for seed but the very choicest; no other plants of the same genus stood in the garden for seed that year. From the seed thus carefully raised, I found a mixture of lemon colored; I was therefore still more particular in selecting my carrots for the next year's seed, but found it degenerate until I was induced to abandon it and try a fresh sort. I afterwards obtained some handsome roots from a neighbor, which I found degenerate, although raised distinct from all other plants of the same species. I was at length induced to try some of the *old man's* seed. He sent me some which he said he raised from seed obtained

through his correspondent from a celebrated gardener of New-York. This he said was good the first year, but although the old gentleman is so precise in his operations it became degenerate. I am aware that an unpropitious soil and climate will cause degeneracy; but in such case the change is more uniform. Carrots or beets growing in a clayey soil for instance will be uniformly paler than those grown in a rich loam. The only way in which I can account for the adulteration before alluded to, is that different colored roots had been suffered to run to seed together at some previous period, and as it is in the animal frame so it may be in the vegetable system. Disorders very frequently lay dormant from one generation to another, and at length break out with all their vigor. I shall therefore not attempt in future "to bring a clean thing out of an unclean." Whenever I find a mixture of colors in roots, I shall reject the whole. While on the subject, I would remind you, that in October, 1831, I gave you the history of a very superior pumpkin, from which I saved the seed with great care. I find amongst the first raised this year, two distinct varieties, although there has been no other plants of either the *cucurbita* or *cucumis* tribe raised in my garden, or in the vicinity. How can this be accounted for, unless the two natures previously existed in the parent plant, without showing themselves in the first generation.

In conclusion, I would remind R. M. W. that the different *varieties* of carrots described by *the old man*, would be more likely to mix than plants of different genera, such as the "cicuta plant, with the cabbage, and the poppy, or the mistletoe, with the oak," *however high they may extend above ground.* I, however, shall not attempt to unveil the mystery, but I am of opinion that a knowledge of the facts above recorded may have a tendency to make gardeners and seed-growers more particular in raising vegetables intended for seed. For my own part, I intend, in future, to change my seed as soon as I discover the least mixture, from whatever cause it may arise. Yonrs, most respectfully,

THOMAS BRIDGEMAN,

Bowery Green-house and Seed Store, near 18th street, December, 1832.

Costiveness in Horses. By CARLO.

MR. EDITOR,—Mr. Hind directs, in case of Costiveness in Horses, back-raking. This appears to me to be a very disagreeable and useless remedy, in no way calculated to afford permanent relief in the disorder.

I would recommend half an ounce of gum gambouge, and one ounce of aloes, reduced to fine powder; mix intimately, adding flour and water until it is of the consistence of unbaked dough: divide into ten balls, and give one ball morning and evening. An injection of simple molasses and water, given once a day for three or four days, will have all the beneficial effects of back-raking, and, combined with the balls, will permanently cure the disorder, whereas the purgatives recommended by Mr. Hind appear to me only calculated to produce a momentary effect to weaken and disorder the system, and rather to aggravate than to cure the disorder. CARLO.

September 3d, 1832.

Carbonic Acid Gas. By R. M. W. [Communicated for the New-York Farmer.]

"Mr. Senebier has observed that plants which are suffered to grow in water slightly acidulated with this gas, emit a much larger quantity of oxigenous gas; because, in this case, the acid is decomposed, carbonaceous principle combines and is fixed in the vegetable, while the oxigen is thrown off."—[Chaptelle, Article *Carbonic Acid.*]

Mr. Editor,—The above passage corroborates my views that the vegetable and animal kingdoms mutually labor for each other; the animal breathing the atmospheric air, is furnished with lungs, having the power to decompose the atmosphere, retain the oxigen, and expiring the carbonic principle for the support of plants, thus the vegetable kingdom is constantly furnished with a supply of food, while it furnishes a similar supply to the animal kingdom. Hence we may infer that the planting of trees and other vegetables in our large cities must be conducive to health, in as much as they absorb and assimilate that principle which would be fatal to animals, while they furnish a constant supply of oxigenous gas for the use of the animal kingdom.

"The carbonic acid gas is heavier than common air. The proportion between these two airs in weight, according to Mr. Kirway, is 45, 69, to 68, 74. The proportion according to the experiments of Mr. Lavoisier, is 48, 81, to 69, 50. This considerable weight causes it to occupy the lowest situations, and gives it the property of being poured out from one vessel to another, so as to displace the atmospheric air. This truly curious phenomenon was observed by Mr. De Sauvages, as may be seen in his dissertation upon air, which was printed in Marseilles, in 1750."—[Chaptelle.]

The nature of the carbonic acid gas seems to have been very generally misunderstood. The common understanding is, that it is poisonous, and instantly destructive of animal life. This impression I conceive is erroneous. All animals having lungs and breathing the atmosphere, require constant supplies of oxigenous gas, or vital air. Without it life is suspended, all combustion ceases the moment the vital principle is destroyed in the atmosphere: animal life is suspended, or extinct. Insects immersed in this gas are instantly rendered torpid, but revive again on being put into an atmosphere charged with oxigen. The density of the carbonic acid gas, seems to keep at a distance the vital principle which supports life and combustion. A candle immersed in carbonic acid gas, is instantly extinguished, but that it is not poisonous is obvious, if we reflect that this gas is constantly in contact with the lungs in respiration. Where it comes in contact with the blood, the air is instantly deprived of its oxigen, the carbon of the blood is destroyed, and the blood changed instantly from an almost black color to a bright scarlet; and the air expired is loaded with the carbonic principle and deprived of its oxigen in a great measure, so as to be no longer fit for respiration. If this carbonic gas was poisonous it must prove fatal at every breath, as the air we transpire is evidently loaded with it, but vegetables immediately absorb and assimilate it, and it becomes a part of their substance, while they transpire the oxigen for the use of animals. It appears to me, therefore, that this carbonic gas, is deleterious to animals, only in depriving them of the vital air, without which they cannot live. All combustion destroys the oxigen principle, and animals exposed to an atmosphere deprived of this principle, must soon expire or become torpid: my impressions are, therefore, that carbonic acid gas is not of itself poisonous, but from its density and ponderous nature, deprives animals of their necessary supply of oxigen.

"I have observed that those fungi that are formed in subterraneous places, are almost totally resolved into carbonic acid."

This short quotation explains many phenomena in the vegetable economy. Most plants excluded from the light are perfectly colorless, and chiefly composed of carbon. Hence the art of blanching various plants such as celery, endive, and many others. Those parts excluded from the light are rendered white, and deprived of many of those qualities which seem to depend on the light for their existence. All coloring matter is said to be in the sun's rays. In excluding a plant, therefore, from the light, we deprive it of its coloring principles, and other qualities which depend on the light.—Many plants without blanching are found to be bitter and ill-flavored, which when properly blanched are found to be pleasant and agreeable to the taste. The modes of blanching are numerous, and are well known to our gardeners. The main object of all expedients, however, is to exclude the light.

Yours, etc. R. M. W.

Overflowing of the Gall of Horses. By CARLO.

MR. EDITOR,—The Rev'd. Mr. Deane, of the New-England Farmer, treats of the overflowing of the gall, and recommends soot, salt, and black pepper, and assures us that this will speedily cure this disorder. Now, I humbly conceive, that neither of these articles have the slightest curative effect in this complaint. He afterwards treats of the same complaint under the name of yellows, yellow water, and jaundice, and quotes from Bartlett's Farriery sundry remedies which I think have as little curative effect as the one prescribed above. When the bile overflows, it finds its way into the circulation, producing glandular affections, yellow water, jaundice, &c. The bowels are either costive or relaxed: to lead the bile into the bowels by its natural channels, would seem to be the obvious remedy for this disorder, and the gamboge and aloes, and other treatment recommended under head of yellow water, I conceive to be the only proper treatment in this disorder.

Yours, &c. CARLO.

September 4th, 1832.

Treatment of the Horn Distemper. By CARLO.

MR. EDITOR,—The Horn Distemper is a disorder by which the farmers' cattle are often affected. Its cure is very simple and speedy. On examining the horn it will be found cold, the eyes dull, and the animal in apparent pain. On examining the end of the tail, the hair will be found curled, and the tail soft and spongy from one to three inches. As far as it is spongy it should be cut off, and the head rubbed with a rag wet with spirits of turpentine. This should be applied sparingly, between the horns and about the forehead near them, before and behind, for three or four days in succession. I have seldom found any other treat-

ment necessary. The boring of the horn, and the injection of salt, vinegar, or other irritating medicine, I deem useless if not injurious.—Such is my experience on this subject.

Yours, CARLO.

Sept. 4th, 1832

Acclimating useful Tropical Plants.—National Botanical Gardens. By the EDITOR.

Whoever considers the extent of our country and its variety of climate and soil, will be struck with its adaptation for the culture of plants of nearly or quite all latitudes. Especially will there be this conviction, if he is familiar with effects of culture and time in acclimating or habituating plants of one latitude to one very considerably higher or lower. It has been, too, laid down as a general rule, that plants produce the most abundantly and of the most superior quality in the most northern limits or highest latitudes, in which they will fully mature their fruit or grain. With these few observations we would beg leave again to call the attention of our readers to the following circular of Dr. Perrine, U. S. Consul for Campeche. To the members of Congress we would respectfully recommend it. The plan of having three National Botanical Gardens is a subject of interest to every citizen of the Union.—[ED.]

The great prosperity to be derived from the cultivation of a single species of Exotic Plants, *was* shown by the old Southern States, in cotton; *is* exhibited by Louisiana, in sugar; and may soon be felt, in some other staple, by the whole confederation. Unlike manufactures, the products of agriculture possess the internal power of rapid reproduction in a wonderful geometrical progression. A single grain, which, in two years, would furnish only seed enough for a single field, in two years more, will afford a sufficient supply to plant a hundred thousand fields! One Cochineal insect alone, whose progeny, in one year, would occupy the leisure of only one rural laborer, in one year more will give abundant employment to the leisure of one million of rural laborers. In a limited time and space, this extraordinary multiplication is as certain in practice as it is astonishing in calculation; and hence the delay or advance of a single year in forming a *nursery of supply* for cultivaters, must be of incalculable importance to an agricultural community. The introduction of valuable vegetables to the industry of the South, is a sure and speedy remedy for its existing distress. Its large capital and fertile soils may still be devoted to the production of the short fibres of the dry pods of its annual Gossypiums, while its small capitals and sterile districts may be transfeared to the cultivation of the long fibres of the fresh leaves of the perennial Agaves; and the resulting Henequen and Pita, as superior substitutes for the Hemp and Flax of northern climates, will become harmonious associates with Cotton, its ancient and principal staple. With the fibres of one exotic vegetable our Southern States have hitherto furnished a material for the clothing of a great proportion of the human race; and with the fibres of other exotic vegetables, they may hereafter supply the materials for thread, twine, and cordage, cambric and canvass, and diversified manufactures, to a great majority of the civilized world.

Besides the foreign plants which are principally valuable on account of the quantity or quality of their fibres, there are thousands whose varied productions are still more profitable in proportion to the capital employed, which may be transferred from South America, Africa, and Asia, to our southern shores: and once within the range of American enterprise, industry, intelligence, and ingenuity, will become converted into mines of vegetable wealth, of which their barbarous native countries have never even dreamed. By the cultivation of the Cactus Gochinilifer alone, the labor of merely the feeble in sex or age, at the South, may divert from Mexico its millions of monopoly in Cochineal.

The foregoing considerations demand the *immediate* establishment of a Nursery of Tropical Plants at or near Cape Florida.

The climates of the Northern and Southern halves of the Peninsula of Florida, are different in kind or distinct in character. Above 28° it possesses the *improved* climate of our Southern States, and below that parallel it enjoys the *improved* climate of the West Indies. St. Augustine resembles Charleston and New-Orleans, in the humidity of its winter and the transitions of its temperature. Cape Florida resembles Matanzas and Campeche in the dryness of its winter and the uniformity of its temperature. The Southern half of Florida has also the perpetual trade wind, the daily sea and nightly land breeze, and the rainy summer of the Islands of Cuba, Hayti, Jamaica, and Puerto Rico, and of the whole Peninsula of Yucatan. Hence it combines all the phenomena of a tropical climate, viz., a constant aerial current to the west; an alternate land and sea breeze; a delicious dry, and a refreshing wet season; and a great uniformity of temperature throughout the year. But Tropical Florida, as it may now be called, must be blessed with a still greater equality of temperature than either the Islands of the West Indies or the Peninsula of Yucatan. It has not the *elevated* mountains of the former to chill and change its atmosphere with thunder, lightning, storm, and rain: it has not even the *wide* surface of the latter to cool the air so greatly by night, or to heat it as greatly by day. But, above all, its happy equilibrium must be sustained by a friend peculiarly its own—the great Gulf Stream, which cherishes the shores it embraces with the heat which it brings from the Equatorial seas. The perpetual trade wind, in its passage across this warm river of the ocean, imbibes its equalizing temperature, and steadily distributes it in travelling westwardly over the whole surface of Tropical Florida.

The whole extent, then, of Southern Florida must present unparalleled advantages for vegetable cultivation and for animal enjoyment. By analogy with Yucatan, its atmosphere should become proverbial for healthiness. Consumption, which annually destroys fifteen per cent. of the population between Boston and New-Orleans, should at least be as rare a disease as it is in Campeche, where it is shunned as a virulent contagion; and the thousands of sufferers, who are sent in its incipient stages to perish amid the sudden transitions of the south of Europe, may hereafter change their voyage to recover in the equable temperature of the south of Florida.

The eastern shore, however, possesses some advantages for a settlement which are not common to the western side. The trade wind arrives at it with the steady warmth of the Gulph Stream, and the pure freshness of the ocean, which may be somewhat disturbed in its course across the interior by the variations and exhalations of the soil; and vessels bound to it will not be exposed to that delay in time, or those dangers in navigation, which necessarily attend a voyage round Cape Sable. But especially in reference to the location of the first Nursery in Florida, the circumstance most essential to its success will be found in speed and safety of communication with the great commercial emporium of the north, as nine-tenths of the valuable exotics of the world can be obtained more easily and cheaply via New-York, than in any other way.

You are respectfully referred to Document, No. 198, and Report, No. 454, of the last Session of Congress, containing a letter from the Secretary of the Treasury, and a Report from the Committee on Agriculture, for an outline of the past services and future plans of the Subscriber, to accomplish the important enterprize of domesticating tropical plants in the United States. You will thence perceive that his hopes of ultimate success are founded on an act of the Legislative Council of Florida, incorporating, restrictively, a Tropical Plant Company, and on a Bill of the National House of Representatives, granting, conditionally, a Township of Land; and that, consequently, if the Company should finally be organized, and the Bill become a law, one or two years must subsequently elapse before any available funds can probably be obtained from either measure, or both combined. Nevertheless, during the ensuing winter and spring, the Subscriber shall be employed in collecting the valuable vegetables of Yucatan and Tabasco, with the *hope* of transplanting them in Florida about the beginning of the periodical rains in May, and of thus commencing a permanent depot for the continued reception of superior species of all celebrated plants of the Torrid Zone. To realize this hope, an intervening accumulation of funds is essential for the transportation of a cargo of living plants, for the preparation of the soil to contain them, and for the maintenance of a family to attend them in the unsettled vicinity of Cape Florida. This obstacle once overcome, he will insure the rapid growth of a systematic garden of improved exotics, in which scientific arrangement and even picturesque beauty shall be blended with PRACTICAL UTILITY—the grand end and aim of his persevering ambition. Believing, then, that the astonishing importance of a single year, in the geometrical progression of a *Distributing Nursery*, will justify the trial of every honorable means to hasten the period of its formation, this hurried address is, therefore, respectfully submitted to the patriotic friends of the *speedy domestication of Tropical Plants*, with the humble expectation that it may excite a *Subscription Loan* for that purpose. The Hon. J. M. White, the Delegate from Florida, in Congress, at Washington City, and the Hon. C. C. Cambreleng, in the City of New-York, will take charge of all sums that may be thus advanced towards the contemplated Nursery, and will return a receipt for the same to each subscriber, which will entitle him to an equivalent in plants or stock.—Mr. S. Fleet, Editor of the New-York Farmer, will receive and forward all communications.

HENRY PERRINE,
Consul U. S. A. at Campeche.

October 4, 1832.

MISCELLANEOUS SELECTIONS.

On the Management of Pear and Apple Trees, and Keeping Fruit in Winter. By WM. GRAY. From Transactions of the Horticultural Society in Durham, &c.

In winter pruning I cut all the long weak spurs, leaving the strong faithful buds in a regular manner. When my trees are in flower in the spring, and a frosty night happens, I wash the blow next morning, before sun-rise, with cold water, throwing the water gently on the flower with the squirt, which washes the frost rind off, and keeps the flower from being damaged.

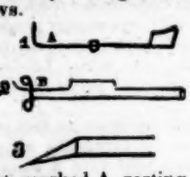
When the fruit gets the size of a pigeon's egg, I thin them to two on each spur; by doing so I seldom have any that drop off, and those left on get larger. The superabundant wood that the trees make in summer, I shorten back to three eyes in the end of June, by which means the sap flows to the fruit and spurs for the next season; when these three eyes have grown a few joints, I stop them again, and when done growing I cut them close out, that the spurs for next season may get the free sun and air. I see some who let this superabundant wood grow on their trees until August, and the sap of the tree flowing to these useless shoots causes the fruit to be small, and weakens the buds for next season.

When I observe the fruit on the trees to change from the dark green to a clear blush, I take them carefully from the tree, and lay a bass mat on the ground, and spread the fruit thereon. I let them remain in the sun about three days, which takes that moisture out of them that causes them to sweat, and they will keep longer when treated

in this manner than when taken from the tree and immediately stored. When stored I find straw the best thing to lay them in.

Specification of a patent for a mode of detaching horses from a carriage, either when running away, or whenever it may be desirable to effect that object rapidly. Granted to Robert Beale, *City of Washington, District of Columbia, May* 12, 1832.

Be it known, that I, Robert Beale, of the City of Washington, in the District of Columbia, have made an improvement in carriages, by which the horses may be suddenly disengaged when running away, or whenever required to be detached from the carriage quickly; called the safety carriage; which is described as follows.



The swingletree is attached to the cross bar by an iron fixture called a jointed clasp, formed as in the annexed figure, (see figure 1); the knee part, marked A, resting against the back of the cross bar. This jointed clasp is held up against the underside of the cross bar by an iron shutter, or hinged clasp, formed thus, (see figure 2,) turning on a joint, or hinge, secured to the underside of the cross bar. To the end of the hinged clasp is attached an iron rod, or bolt, B, with an eye at its end. This rod, or bolt, passes through an opening in the cross bar, and has an iron spring key inserted through the eye, resting on the upper side of the bar, which secures the jointed clasp from dropping; or the rod may be fixed permanently to the cross bar, projecting far enough below it to pass through a slot or mortice in the end of the hinged clasp, with a spring key inserted through the end of the rod, or bolt, to prevent the hinged clasp falling. To the end of the spring key is attached a cord which leads inside of the carriage, where it hangs loosely. Should the horses take fright, and become unmanageable, the cord is then to be pulled suddenly, which will draw the spring key from the eye of the rod, or bolt, let the hinged clasp fall, and with it the jointed clasp attached to the swingletree, and will disengage the horse from the carriage.

The tugs are open in front, thus, (see fig. 3,) to allow the breeching to slip off freely. This breeching is made from a single strap of leather, with rings sewed to the ends, to hook over the tugs.

The shutter, or hinged clasp, may have its end turned up at right angles, and formed like a catch, or hook, and secured by a spring, fastened to the side of the cross bar, the cords being attached to the end of the spring. The shutter may, indeed, be held up in a great variety of modes, but the before described are sufficient to show the principles of my invention.

When it is desired to retain the swingletree, and let the horse go off with traces only, a hinged clasp must be put on each end of the swingletree, with the jointed clasps secured to the end of the traces, and the cords attached to the spring keys run through pulleys and are joined to the cord which leads inside of the carriage.

In the two-horse carriage, the shutters, on hinged clasps, are hung on the under side of the whippletree, and the cords attached to the spring keys run along on the top of the whippletree in a straight line, then pass around pulleys, and are joined to the single cord which leads inside, or outside, of the carriage. The pulleys are to cause the cords to run freely, and to draw the spring keys, or pins, from the eyes of the rods, or bolts, in a straight line.

An iron tube, with a flaunch on one end, is fastened to the end of the pole. Over this is put a thimble, having a ring on each side, to which the breast straps are attached. This thimble slips off the end of the pole, when the horses are disengaged.

The mode of detaching the horses from the two-horse carriage is similar to that described for a single horse carriage.

In a four-horse carriage the leaders are disengaged from the pole in the same manner, by a jointed clasp, hinged clasp, spring key, and cord, as described for a two-horse carriage. The jointed clasp may be held up against the cross bar by a pin inserted through the jointed clasp into the hind part of the cross bar, to which pin the cord is attached.

The jointed clasp may also be secured by a spring fastened on the hind part of the cross bar, the cord being attached to the end of the spring. Springs, or friction levers, are secured to the carriage, brought in contact with the hub in order to decrease the motion of the carriage when the horses are liberated, or before they are liberated.

This invention may be applied to field artillery, and it will enable the men to limber or unlimber the gun in less than half a minute. It may also be applied to wagons of every description, to ploughs, and harrows, and all kinds of agricultural implements drawn by horses, when required to be taken in haste from the carriage to feed, &c.

A forked piece of iron is suspended over the hound and front axletree to prevent its turning on the body bolt.

What I claim as my invention, and which I wish to secure by *letters patent*, is the before described apparatus for suddenly disengaging horses from carriages.

For a further illustration of my invention I would refer to the models and drawings of the same deposited in the patent office.

Robert Beale.

[*From the New-England Farmer.*]

Profit and Expenses of Farming, &c.—The profit of farming greatly depends on the economical management of working cattle, with the implements immediately connected with them. An account should be opened for teams, and charged with the cost of the horses and working cattle; also the waggons, carts, ploughs, and other instruments connected with them; likewise shoeing, and the grain, roots, hay, &c. consumed by them; and at the end of the year, allowing a proper per centage, or premium, for the risk of their lives, the balance may be struck. Perhaps less than five per cent., which seems to be the usual premium, would cover this risk on all kinds of live stock, if a full supply of nutritive matter be provided for them, and proper care be taken of them.—A sum equal to such depreciation of their value as may arise either from age or accident, should also be charged; likewise the annual wear and tear of carts, ploughs, and other instruments connected with the use of the teams, together with an average interest on the account, which being previously credited with the number of days the horses and oxen may have happened to work during the year, will determine the cost of a day's work done by one or more of them. The farmer may be assured that unless no more working cattle be kept than are absolutely necessary, and great economy be practiced in the management of them, and the implements connected with them, the price of a day's work done by one or more of the horses or oxen will so far exceed credibility with those who have not investigated this important subject, that I will omit making the probable estimate lest it might be supposed that it was not founded on facts that actually exist when the genuine principles of rural economy are not attended to.

An account similar to that for the horses and working cattle will determine the expense and cost of the animals reared or bought for sale. The account of teams for the ensuing year will, of course, be charged with the present actual value of the horses and oxen, together with the present actual value of the implements connected with them.

The expense of each crop will be determined by charging it with the cost of cultivation, &c. Also an average interest on the capital employed in it, together with a rent for the ground, equal to an annual interest on the sum it cost per acre: this should be estimated by adding to the first cost of farm, the cost of the necessary improvements made to place the buildings, fences, &c. in a proper condition for farming. But after the farm has been put into proper order, an account should be opened for the general expenses of it, such as keeping the buildings, fences, &c. in order, or such other charges as cannot be readily placed to the debt of any particular crop, &c. and after charging an annual average on this account, the balance should be carried to the account of profit and loss, at the end of the year. The whole of the grass grounds, for any one year, will require but one account, be the fields many or few. An account should always be opened for such implements of husbandry as are not connected with the teams, and their separate costs and repairs charged to it; also an annual average interest on the amount; likewise the wear and tear of the implements. After this has been done, and credit given for the actual value of the implements on hand, the balance should be carried to the account of profit and loss.

Wheat.—Last spring we published some suggestions on the late sowing of spring wheat, as a means of saving it from the ravages of a little yellow worm, which some incorrectly call the *weevil*. A number of our subscribers tried the experiment, and, so far as we have heard, with entire success. A farmer in Orange County told us that he sowed one acre of spring wheat *ten days* later than the rest in the same field. The first sowed was seriously injured, the last not at all. Several, in several towns, made similar statements.

It has been observed, from the first appearance of this insect, that the earliest winter wheat was less injured by its attacks than any other. It is evident, therefore, that the time of laying the eggs is short. It is, probably, soon after the heads make their appearance. Before they are defended by the leaf which incloses them; and when they appear, most probably, the husk soon becomes so hard that the insect cannot pierce it to deposite her eggs upon the kernel. We have, then, only to ascertain the time, as exactly as we can, in which the injury is done, and have our winter wheat too forward, and spring wheat not forward enough, for the operations of the insect, and the damage is avoided. At present, sow your winter wheat as *early* as you can, and sow your spring wheat as *late* as you can and give it time to ripen.

Farmers, and all who find either pleasure or profit in any thing made from wheat, would be greatly indebted to any entomologist who should make us better acquainted with the character and habits of this destructive insect.—[Vt. Chronicle.]

Ale from Mangel Wurtzell.—A writer in the New Monthly Magazine states, that from numerous experiments, he finds that an excellent ale may be brewed from this root in the proportion of fifteen pounds weight of it to the gallon of water, with the addition of two pounds weight of molasses, to the firkin. One third of malt and mangel wurtzel liquor will make a capital ale, so that even in this way a great saving might be effected. The method of brewing adopted by the writer is thus described: "First wash (or rather pare) off the outer rhine, slice and boil them until soft and pulpy, squeeze the liquor from the pulp as much as possible, and then boil it again with about six ounces of hops to nine gallons, and work with yeast in the usual way."

The leaves of the mangel wurtzell stripped from the plant in August or September are valuable food for the cow or pig, not retarding the growth of the plant in the least; the culture of the plant is very simple; the seeds should be placed on well manured ridges, eighteen inches apart, and six or eight inches between the plants; hoeing down and keeping them free from weeds.

[*From the Vermont Chronicle.*]

WINTER BUTTER.

Messrs. Richards and Tracy,—With this I hand each of you three samples of butter, made within two miles from your office, on the days following, viz. No. 1 on the 3d, No. 2 on the 9th, and No. 3 on the 17th of Nov. 1832.

Though I do not think I have ever chanced to see so good butter made at this season of the year, it is no vain or boastful desire that prompts me to exhibit these samples. My only object is to communicate, with your leave, what I consider as a discovery in the art of making butter, and to verify in what I communicate, by an exhibition of the results of the experiments already made.

Without further introduction, I will state the process; and I hope it is not the worse for being simple. It is this:—Place the cream in an iron kettle, over a clear fire, and bring it near but not quite to a boiling heat. In doing this, observe two things. 1. To stir the cream frequently, but not while over the fire. It more readily imbibes smoke when stirred than when at rest. 2. To skim off all the froth* that may rise while heating. After thus heating, stirring and skimming, remove the cream and put it into a stone churn, and set it away where it will not freeze, and let it remain till the next day. Then bring it towards the fire, and gradually and slightly warm it,—turning the churn around occasionally. It is then churned with a uniform and rather animated motion, but with no violence. The butter will appear in about 25 minutes after the churning commences.—That was the time occupied, as we conjecture, in churning, on the said 3d and 9th of November. On the 17th, the time, we know, was only 23 minutes.

You will observe that samples No. 2 and 3, are as yellow as June better; and that though the peculiar rich flavor of June butter may be wanting, still there is no bitter or unpleasant taste in either sample. Please to observe also, that Nos. 2 and 3 have a waxy quality and appearance, peculiar to good butter.

The reason why No. 1, though made earliest in the season, is not as yellow and waxy as Nos. 2 and 3, we conjecture to be this—that No. 1 was warmed rather too much at the time of churning.

I milked but two cows during the time stated, and was only able, after supplying other demands for milk, to set about 7½ quarts of milk each day for cream. I did not weigh the butter, but have no reason to suppose that the quantity was materially altered by the new mode of making. The cows were fed on frostbitten grass, hay, and top stalks, with a small allowance of pumpkins or potatoes night and morning.

The cream churned on the 3d, had not been frozen, but the grass on which the cow fed had been frozen. That churned on the 9th, had been partially frozen, and that churned on the 17th had been all frozen. A. B.

P. S.—Nov. 23, 1832. Since writing the above, the experiment of making butter by heating the cream as above mentioned, has been this day again repeated, with entire success. It is perhaps unnecessary to observe that, probably, many things in the process described might be varied without injury, and perhaps with advantage. I conjecture that the *secret* lies in removing the froth.

* It may be that it is this froth which occasions all the trouble in the usual way of making butter in winter. If mixed with skimmed milk, this froth is said to make good "shortening."

TO TAKE OUT GREASE SPOTS FROM A CARPET, OR ANY OTHER WOOLEN CLOTH.—Dissolve a piece of pearlash of the size of a pea, in half a teacup of warm water; or a piece twice the size in a full teacup. Pour some of the solution on the grease spot, and continue to rub it hard with a clean brush or woollen cloth until it is nearly dry, and your carpet or garment will be as clean as ever. I have tried it repeatedly, and found it effectual.

[*From the New-England Farmer.*]

AGRICULTURAL ESSAYS, No. VI.

THE ADVANTAGE OF AN ORCHARD.—When we survey the goodly country around us, of which our industrious ancestors took possession about two centuries ago, we see the ruins of many once beautiful and flourishing orchards: and we are surprised that their descendants have endeavored no more to counteract those ravages of time, by replacing the labor of their hands. To excuse this negligence it has been observed that young orchards will not succeed on those lands from which old ones have been removed; though pear trees will, and last for more than one generation. But if this observation be just, and it is more than probable that it may be, for large trees must impoverish the ground on which they grow, there is scarcely any considerable farm on which some new situation may not be found on which to place an orchard. Any southeast prospect, or an hill dripping towards the south, which is a most excellent situation, or even the sides of roads and fences around pastures and mowing lands, will answer very well. Trees thus placed will yield a great plenty of fruit; increase the grass; afford a comfortable shelter for cattle, and be highly ornamental.

It would be judicious to propagate a large proportion of sweet apples: as they afford a rich repast for the table of the farmer; are equal in value to any other apples for cider; and will almost fatten sheep and swine. One would imagine, that the profits and pleasures arising from an orchard would stimulate the farmer to propagate the apple tree; but in nothing, perhaps, has the present generation been more deficient. Many farms on which scarcely an apple is now to be seen, abounded with those of the first quality fifty years ago. Cider was then so plenty that it would not fetch more than two or three shillings, at the press, per barrel; nor more than five or six in the market. In that part of the country in which the writer then lived, about a dozen miles from Boston, apples, pears, plums, cherries and peaches, were exceeding plenty. Boys were seldom or never known to rob fruit trees of any kind: and the poor had only to ask and gather what they wanted. I know of no tree in this country which produces a greater variety of fruit than the apple; scarcely any two, unless grafted, or inoculated, being of the same taste and flavor, which can be used in a greater variety of ways, and preserved for a longer space of time, than that which I am recommending. In bloom the apple tree makes a most beautiful appearance, and the fruit of it even in its crude state, affords an agreeable tart. Although it is said by naturalists, that the crab is the parent of all apples, they differ in many essential respects from each other. Some are ripe in July, and highly agreeable to the palate; others are mature in August and in September; and so on, in succession, till late in October, when all come to perfection, and there is the greatest variety and abundance. While some are most excellent for pies, and others for sauce, a greater proportion are for eating; and may be preserved through the winter, with no other expense than barreling, or boxing them up: and all of them may be converted into a very wholesome, vinous liquor, which will keep through the whole of the years. But some have observed, that apple trees are liable to frosts, worms, caterpillars, &c. and, therefore, they neglect the propagation of them. Apply this reasoning to flax, barley and to corn: shall we neglect these things because they are subject to frosts, worms, mildews, and the like evils? It is true that apples are not so necessary as bread; but they are very grateful and profitable. If only one tree out of twenty set out by the farmer, should flourish and bear fruit, within twenty years after the propagation of it, he will receive a tenfold reward for all his expense and trouble. Let your apple trees be carefully planted out; well secured from sheep and cattle; and judiciously grafted; then you may comfort yourself with the reflection, that you have laid the foundation of that wealth which will grow and increase as you advance in years, and eventually descend to your children. Could I name a certain tree, which would grow rapidly; and extend its branches far and wide; and which would last for a century or more; and that this tree within less than a dozen years after the seeds of it had been sowed, would start up and bear a multitude of little silver pieces, equal in value to the sixteenth, or even the sixtieth part of a dollar, would you not endeavor to propagate that tree? Why, then, can you not be persuaded that all the profits of this tree may be realized, if you will cultivate the apple tree! Although the fruit of this tree is another kind of property, and differs in appearance from those little pieces of silver, it will as certainly produce them as if the tree itself had borne them.—Whatever you cultivate, and which produces silver, is the same in point of profit as silver itself.

There is one consideration more on this subject, and which may not be unworthy of your attention. Many farmers who hire a number of laborers are obliged thereby to pay a very heavy tax, to which their forefathers were entire strangers. I mean the expense incurred by *Rum*, and which is more prejudicial to their interests than frosts and caterpillars are to their orchards. And I can see no way of withstanding this growing evil, but through the influence and increase of *Cider*. When this liquor was plenty, and when good small beer held a respectable place in the farmer's cellar, the best of laborers—men who would reap or hoe an acre per day, in light land, and go home at night contented with their wages, were ready to be hired—there were enough of these characters wishing to work, and the farmer had not to court them into his service. And I have no doubt, was cider as plenty, and good small beer in as much reputation in these days, as they were fifty or sixty years ago, farmers would soon experience an alteration in their favor.—The man who will not labor cheerfully and faithfully when he has victuals enough, and good cider and beer, is not worth his keeping. If then you would reap the above profits and pleasures, and rid yourself of this needless and burthensome tax, cultivate the apple tree; and endeavor to excel in the quantity and quality of your cider, which is annually increasing in value.

I shall close by observing that every apple tree increases the value of the farm on which it grows. Those farms on which good orchards are placed will commonly be in demand, and greatly preferred to those which have none.—Indeed a judicious man will not readily buy a farm which has no orchard on it; because it wants one essential advantage; more especially if it be near a market town. A young and flourishing orchard has rendered many an old and worn-out farm saleable.

No. VII.

KEEPING A DAY BOOK.—Both merchants and mechanics are greatly indebted to their books of accounts, for information and success in the several branches of their business, by regular and correct entries. The transaction of every day should be correctly noted. The time when you plough, sow, plant, mow, pull flax, cut fuel, gather corn, potatoes, &c. and the quantity and quality of manure laid on each field, should be carefully noticed. You will then know the season when labor must be done the next year, in those fields, and the kinds and proportions of manure required to dress them. Farmers should weigh all their pork, beef, butter and cheese; and measure all their grain, corn, potatoes, &c. and indeed, every article they lay up for winter; and also the time when they kill their creatures and the food on which they were fatted. This will show the quantity they consume, what, and how much of each article, and how much they may have to dispose of. Days on which they hire laborers; the labor perform-

ed on those days, and the price paid for that labor should be entered. This will show what time and labor must be performed the next year, the price of it, and the money which may be wanted to carry on the business of the farm.—Every farmer should mark the day on which his cows, mares, &c. associate with the males of their several kinds; he will then be able to provide proper room, &c. for the reception of their young, and to attend to their keeping in due season, and which ought to be a little better than common, at those periods. For want of this attention, multitudes of calves, lambs, pigs, &c. are annually lost. The ages of lambs, calves, colts, &c. should be carefully noted, and the weight of them when killed, as this will point out those ewes, cows, &c. which are best for breeders; which is a very material branch of knowledge, in regard to the growth and value of a stock of cattle. In short, the Farmer should note the business of every day, how and where he past it, and what the weather was; and he should not forget, that so much of the goodness of his crops depends upon early and seasonable cultivation that he had better give any price for labor than be belated; more depends on this than farmers in general seem to be sensible of. Flax, sowed early will have a better coat, and more seed, than when sowed late. Barley sowed early will not be liable to blast and mildew; and Indian corn planted and hoed in good season, will not be so liable to suffer from drought, and from frosts, and will be fuller and heavier, than when planted late, poorly ploughed, and indifferently hoed. Grass land on which manure is spread early, will yield a much better crop, than if spread late, and *one* load of grass cut when ripe, and before it withers and turns white in the field, will be of more value than *two* loads of the same kind cut after it is ripe, dried away and weather-beaten: it has lost its juices in this state, which is all that is valuable. Our summers are so short, that every possible advantage should be taken for early cultivation: for negligence and inattention in the spring will certainly be followed by cold and hunger in the following winter.

But to return. A Farmer should keep a careful entry of all his fodder; the quantity and quality of each kind—for he may wish to purchase and winter a cow or two extraordinary; and an account of the manure made by his swine, by scraping of the roads, his yards, by mud, barn dung, &c., for this will show him at once how much land to break up, and the strength he will have for next year's cultivation: if he neglects this branch of good husbandry, he cannot expect to form a just estimate either of the labor or profits of the next year. To avail himself of the advantages which stand connected with his situation and farm, he must attend to these things, many of which may appear of little or of no consequence in the eyes of the mass of farmers; but they certainly deserve their very serious attention. Laborers, unless upon some urgent occasions, should never be hired by the month, nor even for a single day, in the winter season, when the days are short, cold and stormy, and when an industrious man can hardly earn his living. The quantity of pork, beef, cider, and other provisions expended, in other words almost thrown away, by this imprudent practice, will certainly be missed, and severely felt in the following spring and summer, unless an additional stock of each be laid up to support it in the fall proceeding. The farmer may hire labor in the spring, to get a good crop in due season: in the summer, to secure his grass; and in the fall of the year, to gather in his harvest; but not in the winter, when nothing can be raised, either for the use of man or beast.

And here I observe, that every Farmer should endeavor to cultivate and take care of his own lands; and not let the profits of them depend on hirelings more than he cannot possibly avoid. And he should never work within doors, while any thing can be done to advantage without; nor set himself or his laborers to that work in fair, which can be done in foul weather.

[*From the Miner's Journal.*]

COAL TRADE.—We have laid before the public some statistical information respecting certain branches of the Coal trade, including a view of the capital invested and labor employed in the business of mining and transporting to market the amount of the annual exportations of this mineral from this region. We have not entered into any calculation relative to the cost or value of the very expensive improvements incident to mining establishments. Neither have we said any thing concerning the lands themselves, whence our supplies are derived. The whole number of miners, laborers, horses, cars and boats employed, together with the respective wages of the two first, and original cost of the latter, is comprehended in our statement, without any reference to other collateral subjects which might be introduced. The amount of coal exported from this region during the season which is just ended, is equal to two hundred and four thousand tons. If sufficient encouragement by early purchases is afforded to the industry of the miner and laborer, this quantity may be indefinitely increased, in a ratio at least equal to any future demands. No one in any degree acquainted with the extensive resources of this region will for a moment question the truth of this proposition. The natural capacity of our mountains to supply the article is literally boundless—the means of exportation adequate—the industry of our population greater than any requisitions that can be made upon it. An example afforded by a single locality will illustrate our meaning. On the West Branch rail-road there are 325 cars, belonging to thirty colliers. Contracts have been already made for supplying 100 additional cars. Without including other cars than those which are already on hand or positively engaged, we will commence our calculation by stating that each car will carry two and a half tons of coal. Allowing only one trip per day, while many very frequently make two, the sum total would equal 1000 tons per day, or 6000 tons per week. Estimating a period of 30 weeks for active operations during the season, the aggregate quantity would amount to 180,000 tons, almost thrice as much as is required for the annual supply of New-York. This is a very moderate statement of what can actually be accomplished by one-third of the coal region. Should the backwardness of purchasers and contractors suffer a considerable portion of the season for active operations to elapse without making provision, our calculation may be verified—but the fault will not be ours.

Of the above mentioned 204,000 tons of the coal shipped from this region, there passed

down the West Branch railroad -	67,059
Mount Carbon, - - -	57,234
Schuylkill Valley, - - -	27,981*
Mill Creek, about - - -	30,300
Total - - - - - -	182,574

The balance of the 204,000 tons was mined on the line of the canal in this vicinity.

One miner can mine 1½ tons of coal per day—say that he works 5 days in the week, and 45 weeks in the year, this will make 225 days; to mine 203,000 tons of coal will require in round numbers 600 miners. It will require as many persons to haul out, skreen, and convey the coal to the landings, making openings, &c. as it does to mine the Coal—therefore say 600 laborers.

The West Branch railroad is about 12 miles long—the average distance of hauling thereon about - - - - 9 miles

Mount Carbon railroad 4 miles,	do	do	3 do
Mill Creek railroad 4 miles,	do	do	3 do
Schuylkill Valley do 10 miles	do	do	5 do
			—20

Average distance (say 5 miles)—one horse hauls 4 wagons, and makes two trips per day—each wagon averaging 1¾ tons—will make 14 tons for each horse per day—multiplied by 225 days, gives 3150 tons to each horse—which divided into 203,000, gives 65 horses. It requires an equal number of horses to haul the coal out of the drifts—say 130 horses.

To carry this Coal to market it requires about 400 boats—400 horses—and two men and one boy to each boat—making 1200 men and boys on the line of the canal. Total, 2400 persons and 530 horses actually engaged in mining the above coal and conveying it to market.

There are on the West Branch Railroad in use 325 cars, Mount Carbon 150, Mill Creek about 200, Schuylkill Valley 230—total 905 cars.

The cars on the West Branch and Mount Carbon railroads cost on an average $90 a piece—and those on the Mill Creek and Schuylkill Valley cost about $50 a piece—which

would amount to - - - -	$64,550
400 boats at $500 each - -	200,000
530 horses at $40 each - -	21,200
600 miners at $7 each per week -	189,000
600 laborers at $6 do do -	162,000
1200 boatmen at $5 do for 32 weeks	192,000
Active capital - - -	$828,750

RECAPITULATION.

Miners - - - - -	600
Laborers and boatmen - -	1800
Total - - - -	2400
Horses - - - - -	530
Cars - - - - -	905
Boats - - - - -	400
Active capital - -	$828,750

Price of Fuel in New-York, Dec. 18, 1832.

COAL.

	Cargo.	Retail.
Liverpool, per chaldron, -	$11 50	$13 50
Sydney do - -	9 50	10 50
Virginia do - -	9 00	10 00
Schuylkill, per ton - -	9 50	11 00
Lehigh do - -	9 50	11 00
Lackawanna, do - -	9 50	10 00

WOOD.

Hickory, per load, (½ cord) -	$2 50	*a* 3 00
Oak do - - -	2 00	*a* 2 25
Ash do - - -	2 00	*a* 2 25
Pine do - - -	1 50	*a* 2 00
Chesnut do - - -	1 37.	*a* 1 50

The following is the quantity of Coal sent to market in the years 1831 and 1832, as near as can be ascertained, in round numbers:

	1831.	1832.
Schuylkill -	81,000 tons	204,000
Little Schuylkill -		14,000
Lehigh - -	43,000	76,000
Lackawanna -	53,000	85,000
	177,000	379,000
The consumption last year, as near as can be ascertained, was		227,000
		152,000

Showing an increase over the consumption of last year of 152,000 tons, and over the supply of the same year of 202,000 tons.

RAILROAD OPERATIONS.—The new Locomotive Engine belonging to the Hudson and Mohawk Railroad Company, and mounted on six wheels, is now running to the entire satisfaction of the company. It came a few days since from the half-way house to the top of the inclined plane in 13 minutes, a distance of nearly seven miles.

Yesterday afternoon about 65 barrels and tierces came across from Saratoga, and reached here in time to be forwarded to New-York the same day.

We also learn that some enterprising persons in Saratoga are sending large quantities of hard wood to the city at a good profit to themselves, as well as to the Saratoga and Mohawk Railroad Companies. Two thousand cords are now being delivered upon one contract, and a large quantity is expected during the winter.—[Albany Daily Advertiser.]

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*There also passed down this road 33,470 shingles and 628,092 feet of boards.

The following account which we copy from the Mechanics' Magazine, of the first attempt to use steam for propelling vessels in England, brings forward a new claimant to the honors of that important discovery. It is an honor *well worth* contending for—"Honor to whom honor is due," is our motto.

HISTORY OF STEAMBOATS—*New Claimant to their Introduction.*—Mr. Wm. Bromilow, a correspondent of the Liverpool Chronicle of Saturday last, has brought forward a new claimant to the introduction of steam navigation in the person of a John Smith, late of St. Helen's.—Indeed the facts, if authentic, leave no doubt that he has a prior claim to both Bell and Fulton. Mr. Bromilow's statement is as follows:

"The engine in the boat alluded to, and which is generally supposed to be the first invented, was constructed for propelling boats by steam, as before stated, by Smith at St. Helen's, in the year 1793, and her first excursion was down the Sankey Canal to Newton Races, in June in the same year, laden with passengers. On the Saturday following she sailed to Runcorn, from thence down the Duke of Bridgewater's Canal to Manchester. On her arrival there, such was the astonishment and curiosity at this wonderful, and as some would have it, this mad idea, that thousands of the people came from all directions to see what their eyes would not believe, nor their senses understand; and, indeed, such were the numbers, and such the curiosity this vessel excited, that Smith was obliged for the safety of his property, to give notice that no one would be allowed to come on board of her, excepting those who paid a certain sum. This exasperated the populace to such an extent, that a party of mechanics immediately got possession of, and almost destroyed her. Amongst the visitors was Mr. Sherratt, of the firm of Bateman and Sherratt, of Manchester; also several other respectable engineers of the same place, whom it is unnecessary to name. So far as memory serves me, (after a lapse of 39 years,) the following is a short description of this wonderful discovery; but having made no memorandums of the circumstance at the time, and, I may say, being then young, and to a certain extent, like the rest of my friends, incredulous, I never anticipated what is almost to every one in the present day so common. The vessel had on her an engine on the old atmospheric principle, was worked with a beam, connecting-rod, double crank, in an horizontal line, and with seven paddles on each side, which propelled her at the rate of about two miles an hour. John Smith was a rude, uncultivated, self-taught mechanic, and was supported with money by a Mr. Baldwin, at that time of St. Helen's, and was the first æronaut who ever ascended in a balloon, either in this or the adjoining counties. Perhaps, I may observe, that the vessel or boat was purchased at Liverpool, and on Smith's informing the parties from whom he bought it what his intentions were, he was treated as some insane person; he was laughed at by one, insulted by another, and pitied generally; but, having money with him, he was allowed to purchase her. On being questioned and laughed at by a merchant at the time the purchase was made, he replied, '*those may laugh who will, but my opinion is, before twenty years are over, you will see this river (Mersey) covered with smoke.*'

"I feel pleasure in giving you these particulars, and the substance of the remarks I can vouch for as being correct, having been an eye-witness to most of them, and one of the party who took his first excursion."

THE CRANBERRY is a native of New-Holland, Europe and America: it grows spontaneously in the flat sandy, and in some of the mossy bogs in this country. At Sandy Neck, on the north side of Barnstable harbor, are quite extensive tracts covered with the wiry vines of the cranberry, and are estimated to produce in favorable seasons one thousand bushels of fruit. The cranberry grows most luxuriantly in soils composed almost wholly of beach sand, where water, at all seasons of the year, can be obtained a few inches below the surface. It can be profitably cultivated. A particular account of the method pursued by Mr. Henry Hall, of Dennis, was some time since given in this paper. He has been engaged in the cultivation of this fruit upwards of twenty years, and his grounds have averaged about seventy bushels per acre annually. Mr. Hall practiced taking the plants from their natural situations in autumn, with balls of earth about their roots, and setting them 3 or 4 feet distant from each other. In the course of a few years they spread out, and cover the whole surface of the ground, requiring no other care thereafter, except keeping the ground so well drained as to prevent water from standing over the vines. The cranberry may be propagated from the seed. It should be planted in autumn, as soon as the fruit is ripe, and a year afterwards the plants may be transplanted to the situations where it is intended for them to grow. There are many situations in this country, and we doubt not in every part of England, well adapted to the profitable cultivation of the cranberry. Grounds that are overgrown with fine rushes or moss, may be rendered suitable, by spreading over a suitable dressing of beach sand previously to transplanting the vines.—[Barnstable Journal.]

Measuring Charcoal and Fruit. By Professor A. EATON.

The following article first appeared in the Troy Sentinel. The practice of having measures that hold less than their names denote, is by no means uncommon in selling many articles besides coal. Bushel baskets for peaches, pears, turnips, and potatoes, hold but three pecks. When it becomes more common to buy and sell by geometrical and arithmetical rules, the temptation to cupidity will be much less.—[ED.]

As agent of Rensselaer School, I have purchased, annually, for the use of the three Laboratories, &c. about five hundred bushels of coal. Though I was careful to have the capacity of the measures correct, I found it impossible to avoid the impositions of old experienced measurers. The late law of our corporation gives them a new and very important advantage. Skill in shoveling coal into a measure is soon acquired; so that a bushel measure may be made to receive a bushel and a peck, or to be filled with three pecks. The practice now is, to fill the sealed bushel measure twice, and to make a basket hold both fillings. Six pecks in this way just fill what is called a two bushel basket—the coal being loosely laid into the one, and compactly into the other. Now the basket becomes the standard as a two bushel measure for all the load except the first bushel. If this kind of fraud is objected to, the coal seller immediately turns his back upon you, and sells his load to an unsuspicious purchaser at the usual rate of one and a half bushel for two.

When coal has been crowded into market in such quantities that honest sales were occasionally made, I have always purchased it by the cubic inch. If the citizens of Albany, Troy, Lansingburgh, and Waterford, would unite in a resolution to purchase in this way, and in no other, coal would become as fair an article of trade as wheat is. I mean that the coal be measured by the cubic inch, before it is removed from the carriage box, or even stirred. It is not necessary that the box be full, or that the surface of the coal be even. Whatever is left at one end of a box may be measured as a triangular prism, or as a parallelopiped with a triangular prism attached to one end; or a part of a whole load may be taken out, and the empty space afterwards thus measured—always in parallelopipeds and triangular prisms.

A bushel of coal contains 2339 cubic inches; consequently this number is always the divisor, after the length, breadth, and thickness (taken in inches) have been multiplied together. This process gives the true measure in bushels, if the coal has been slowly moved on a smooth road but a short distance; or not moved at all.

Allowance for shakage (as it is called) must be made in all cases, when the load has been drawn over a rough road, or even but moderately fast on a smooth road. I have made several trials, by the aid of honest coal-sellers, during the two last years. From all which we agreed that I should allow 14 per cent. for shakage, when the coal had been drawn down the turnpike road from near Sandlake (10 miles); or from any other place five or six miles easterly from Troy. Recently I have satisfied myself from good evidence, that a load of coal will settle in running three or four miles, so as to diminish its volume about 14 per cent.; that it will not lose more than one or two per cent. in addition, in running ten or fifteen miles. Therefore I adopt the following rules at present in all cases:

1. Take the length, breadth, and thickness of the mass of coal to be measured, in inches.
2. Multiply these three dimensions together.
3. Divide the product by 2339, the cubic inches in a heaped bushel of coal, potatoes, apples, turnips, ears of corn, &c.
4. Add to the quotient 14 per cent. for shakage in the highest degree—reducing it according to circumstances.

N. B.—Apples, potatoes, ears of corn, &c. &c. may be measured in the same way; but the allowance for shakage should be rather less than half as much for coal, according to my trials. AMOS EATON.

Animal, Vegetable, and Mineral Substances examined by the Microscope.

In order to view the blood circulating through its vessels, we must procure animals, the skins of which are transparent, and no object is better calculated for this purpose than the small tadpole. The circulation of the blood in this little animal is a most magnificent spectacle. In order to view it to advantage with the microscope, place a piece of window glass about two inches by one upon the stage; upon this the animal is to be placed without any further preparation. The tail will now lie flat, and being very transparent, the innumerable channels contained in it will be perfectly visible, within which the blood, consisting of globules suspended in serum, will be perceived coursing with extreme rapidity in all possible directions.

Along one side of the longitudinal tapering substance in the centre of the tail, a main conduit proceeds to the extremity thereof, returning towards the body, at a very small distance from the salient part, and in a parallel direction; from this, branches proceed laterally, which subdivide themselves to infinity. The subdivisions of each of the branches are joined at their extremities, thereby forming a perfect connexion between the whole. The blood proceeds from the main conduit by each alternate branch, and after passing through the various subdivisions of one branch, enters those of the next, on each side of it, by which it returns into the main conduit, and this process is repeated until the mind is bewildered in its attempts to trace its course in all its minute ramifications.

In this description the usual terms of arteries and veins have been avoided, as, in this animal, the distinction seems to be lost in consequence of the blood appearing to issue from and return into the main conduit, both in its salient and returning part, although it is probable that the returning main conduit is really a vein, receiving the returning branches, or veins, which must, in that case, pass either above or below, and not into the salient part of the main conduit or artery. As the substance in which these main conduits are inserted is much more opaque than the rest of the tail, the phenomenon cannot be so well observed, and it is, in consequence, difficult to arrive at a safe con-

clusion; however, enough is to be perceived to excite the wonder and admiration of every beholder.

The Blood.—Upon submitting the blood to the microscope, it is immediately perceived to consist of globules suspended in a white transparent serum. A remarkable fact will strike every observer, viz. there will be seen a continual motion of the globules, as if they were acted upon by some unknown agency. This motion appears completely vibratory, like a balance which has received an impulse; it is difficult to account for this phenomenon, but the following hypothesis is hazarded. This seeming tendency to motion in the globules, may be a material assistance to the impulse given by the heart, whose mere mechanical force, however great, appears hardly sufficient to propel the globules through such inconceivably minute ramifications through which we know it does pass, previous to reaching the organ of circulation by the larger veins.

Place a small drop of water upon a slip of glass, into which introduce a drop of warm blood, by which means the globules will be separated, and become distinctly visible; use that power which will most enlarge them without taking away from their distinctness.

Pulsation of the Heart.—This wonderful phenomenon may be seen distinctly in several small insects; in a bee it is observable near the neck, but the best insect to view it in, owing to its transparency, is the water flea.

Feathers of Birds.—The feathers of birds afford a variety of beauty, and differ greatly from one another, not in their form, but in the structure of each particular part. The feathers of tropical birds have the most beautiful plumage. The handsome and delicate colors of the humming-bird and the tail of the peacock are well worth observation.

Scales of Fishes.—The scales or outward coverings of fishes are formed with surprising beauty and variety of shape, and texture—as the perch, sole, barbel, cod, etc. The scales of eels in particular are very small;—the way of preparing them is to take them off with the forceps, and put them between a sheet of paper to keep them flat till dry. The arrangement of the scales of fishes bears a resemblance to that of the feathers of birds. The serpent and lizard have likewise scales. The scales of the sole and perch are well worth preserving for the microscope.

Hairs of Animals.—Hairs of animals are very different in their appearance before the microscope, and will furnish a great variety of pleasing observations; they are composed of small tubes or pipes. There is also in the hair of many animals spiral lines; a mouse's hair is of this description; the human hair is also a good specimen.

Farina of Flowers.—The farina or scaly powder, found on the top of every flower, deserves the strictest examination. This powder, whose color is different in flowers of different kinds, was formerly supposed to be an unnecessary part of the plant; but the microscope has also made surprising discoveries here, by showing that they are minute, uniform bodies, constantly of the same figure. This powder is produced and preserved in vessels wonderfully contrived to open and discharge it when it becomes mature; there are, likewise, seed vessels in the centre, ready to receive them; and on the powder depends the fertiliiy of the seed, for if the farina vessels were cut away, the seed would become barren. In the farina of the melon, it appears as opaque black balls; in the sunflower, surrounded with sharp points; in the tulip, like the seeds of cucumbers. Gather the farina on a fine sunshining day, when the dew is off, be careful not to squeeze or press it. Gently brush it off with a soft hair pencil upon a piece of clean paper or slides prepared with a little gum water.

Down of Plants.—Nature has supplied the seeds of the thistle and many other plants, with a down, which serves, instead of wings to convey them from one place to another. The figures of such down are very different when examined by the glass, some plain and smooth, others rough, and some with little hookr or clasps, to catch hold of any thing.

Seeds.—Most kinds of seeds must be prepared by steeping them in warm water to discover the minute plants they contain. The seeds of strawberries rise out of the pulp, and appear like strawberries. When viewed, seeds of the poppy, lettuce, thyme, parsley, and a thousand others, afford delightful entertainment. The fungus, or puff ball, when crushed, seems to the naked eye like a smoke, or vapor. When examined with the highest power, it is found to be composed of little globules of an orange color.

Leaves.—The leaves of plants are full of veins or ramifications, which convey the juices. The leaves of the yew are full of holes like the honey-comb. The sage leaf appears full of knots or little beads.

Cuttings of Wood.—The air vessels and pores of wood appear wonderful in their figure and variety when shaved off as thin as possible. Fir and cork are the best for examination; but all the kinds of wood may be rendered fit for the purpose. It is advisable to have several slides filled with the different kinds of wood, both American and foreign. In a piece of cork, no larger than the eighteenth part of an inch, sixty cells were numbered in a row; whence it follows that one thousand and eighty are in the length of an inch; one million one hundred and sixty six thousand four hundred in a square inch. From the pith of trees cut so that they become transparent, the vessels may be seen. The pith of elder is a beautiful object for this purpose.

Mosses.—Mosses of all kinds are agreeable objects, and appear by the microscope to be as perfect in their parts as the largest trees; those which grow on the rocks and coast of the sea exhibit amazing beauty.

Sponge.—Sponge is a plant, and appears to be composed of minute tubes, or vessels, which by their capillary attraction is the cause of its absorbing so much water. The fibres should be examined separately.

Sand.—There are many sorts of sand on the sea shore, or within land; their varieties are very agreeable to examine; some have angles and rough coats; others, the most beautiful polish, and as transparent as the diamond.

Mouldiness.—All kinds of mouldiness on decayed fruit, bread, etc. the microscope discovers to be exceedingly minute plants, bearing leaves, and in every respect developing the same beauty and regularity as the leaves of trees.

The Method of preparing Salts for viewing their Crystalizations.—After dissolving the salt in water sufficient to saturate it, and being perfectly dissolved, let it rest for a few hours; the solution being thus prepared, take up a single drop and place it on a slip of glass; spread it gently over the glass, as level as possible; hold it near a fire or candle, to give it a gentle heat. When the edges begin to look white, having your microscope ready, place the glass, and you will see the formation of the crystals; when the action once begins, the eye should not be taken off, for the figures, in forming, alter every instant till perfect. If you provide yourself with several small bottles, a collection of the solution of the different salts may always be in readiness for the microscope, and by a variety of combinations, you may produce several thousand objects for examination—a sight no one can behold without delight. As soon as they become formed, they are either cubes, rhomboids, pyramids, or certain regular figures, showing always the same sides, or angles, in different substances. The following are the best for this purpose. Nitre, rock-salt, Glauber salt, sal ammoniac, hartshorn, green vitriol, white vitriol, and salt of amber.

The following description of the formation of the crystals of alum is taken from Mr. Baker's work on the microscope. 'The configurations of this salt abound with beauty and variety; place a drop of this solution on the glass, and, gently heated, it exhibits at the beginning, a dark cloud, which appears in motion near the edge, and runs swiftly through to the right and left till they join; these when examined appear to be salts shot into slender lines, which cross one another at right angles.

'Crystals of Silver.—These form a beautiful opaque object. In a drop of nitrate of silver, put a fine piece of copper wire, or the point of a pin; place it directly under the microscope, and the crystals will extend till the fluid is evaporated; this object may be permanently preserved: take a piece of Bristol card paper of the required thickness and of the same size as the glass to which it is to be fixed; punch an aperture in the centre of the card, then with gum or paint, fix it upon the glass, place a drop of the solution of nitrate of silver within the aperture, into which drop a small particle of copper; when the crystals have formed and the evaporation subsided, cover the aperture with glass or talc.

'By dissolving any mineral in muriatic or nitric acid, and placing it under the microscope, you will perceive beautiful crystals formed.

'Common Salt.—Place a single drop of water in a glass, and put a few particles of common salt in it; give it a gentle heat till the water is evaporated, and you will have beautiful crystals in the form of cubes. Epsom salts will be formed into six-sided prisms, alum into octagons, crystals of nitre, saltpetre, and green vitriol, into the same form. To obtain crystals of camphor, place a drop of spirits of wine on a glass, hold it over a candle; when evaporated, place it on the microscope, and they will be seen.'

To find the Magnifying Power of the Microscope.—Place a micrometer upon the stage, (one of the four-hundredths of an inch will be the most useful for this microscope,) and adjust it to the focus of the power in use. In order to ascertain how many times the squares are magnified, no more will be necessary than to ascertain the size of the magnified image of one of them, and the best method to do which is the following:—on several pieces of card, rule a few squares which bear a known proportion to an inch, beginning at about three-quarters of an inch; and decreasing very gradually until you arrive at a tenth of an inch. The use of these pieces of card is exemplified by the following example.

Suppose the lowest power to be in use, with the above micrometer on the stage, adjusted to the true focus, compare the squares upon several of the pieces of card, and select that which contains squares of the same size as the magnified image; and having previously noted upon each piece of card the proportion each square bears to an inch, you immediately know the size of the magnified image, which in this instance is indicated by the card to be a tenth of an inch; and as the two-hundredth of an inch is contained twenty times in the tenth of an inch, so many times is the length of an object magnified; and as the breadth is magnified in the same proportion, the square of twenty must be taken, which is four hundred, the true magnifying power.

The following are the different magnifying powers of the microscope:

No. 1, lowest power, magnifies—single, 100 times—with the compound body, 625.

No. 2, second power—single, 144 times—with the compound body, 900.

No. 1 and 2 together, 3d power—single, 400 times—with the compound body, 2500.

No. 3, fourth power—single, 4225 times—with the compound body, 26,000.

Other powers may be added to this microscope as described in the table.

N. B.—The height of an object being magnified in the same proportion as the length and breadth, the cubes of the magnified diameters might be introduced in the above scale, altho' it must be admitted that the height is, in a great measure, lost to the eye, in consequence of its being perpendicular to the object; therefore, in estimating the magnifying power, the cube is usually rejected.

TO FIND THE MAGNITUDE OF A MINUTE OBJECT.—The most correct and readiest way on all occasions to find the magnitude of an object, is to take a piece of glass, divided into any number of parts, or lines, of 100 or 200 to the inch; it may be placed on the stage, and a drop of water or any other object put upon it. Find what proportion the object bears to the space within the two lines, and if it take the whole space, it is one or two hundredth part of an inch, according to the scale.

THE WORKS OF ART AND NATURE COMPARED TOGETHER.—Upon examining the edge of a very sharp razor, it will appear as broad as the back of a knife, and full of notches. The point of a small needle, though extremely fine to the naked eye, will appear through the microscope full of holes and scratches; but the sting of a bee, viewed with the same, will appear beautiful, without a flaw or blemish. A piece of fine muslin, or lawn, appears like a coarse lattice, and the threads like ropes; the same with fine lace; but the thread of a silkworm or the web of a spider will appear perfectly smooth. The smallest dot made with a pen appears a vast irregular spot, rough and jagged. Thus sink the works of art; but in those of nature, even in her meanest productions, nothing will be found but beauty and perfection.

What we know at present of things near and familiar is so little, that there remains a boundless space for our inquiries and discoveries in the works of nature; and the more we inquire into them, the more comprehensive and just will be our ideas of the power, wisdom, and goodness of the Creator.

The following is a list of the principal objects which afford the highest entertainment and instruction by the microscope. They may be divided into the following classes, viz.:

I. Such as have their whole body, form, and parts, magnified and exhibited in one microscopic view, as the louse—the flea—the bug—the mite—the eels in paste, vinegar, &c.—the animalcules in fluids—very small flies and insects, of all sorts—the smallest kinds of plants, mosses, mouldiness, &c.

II. The small parts of animals, viz.: the hair of the head, horse hair, mouse hair, hog's bristles, &c.—the human cuticle, or scarf skin—the papillæ pyramidales in the skin—the fibrillæ of muscles, nerves, &c.—the ramification of arteries and veins—the lymphæducts, lacteals, and other fine vessels—the blood, &c.—the circulation of the blood in the fins of fishes, the tails of tadpoles, and of water newts the best of all—the nails and hoofs cut into thin slices—the plumulæ or plumage of feathers—the pith of a feather cut transversely—the color and tints of feathers, eggs, &c. of birds—the eggs of all kinds of insects—the antennæ, or feelers of gnats—the eyes of all insects, shell fish, &c.—the beautiful head of a flesh fly—the annuli, or rings, on the bodies of insects—the wings of gnats, flies, &c.—the wings of scarabæi, or beetles—the wings of butterflies, moths, &c.—the sting of a bee, wasp, hornet, &c.—the eyes of spiders—the exuviæ, or casts of spiders—the apparatus in the mouths of spiders—the spiral probosces of butterflies, &c.—the teeth in the mouth of a snail—the eyes on the horns of snails—young spiders, caterpillars, &c. just hatched—the web of spiders, caterpillars, silkworms, &c.—the chrysalides, or cases of insects—the thecæ of moths, caddis worms, &c.—the scales of fishes, serpents, &c.—the scales of eels in particular—the transparent fins of fishes and eels—the spiculæ, or prickles, of seal skins—the ovaria, or sperm of fishes—the minute sorts of shell fish—the fimbriated parts of crabs, lobsters, &c.—the excrements of scollops, &c.

III. The third class of microscopic objects are of the vegetable kind: the plantule in the fruit, or kernel—the corpuscules of the two lobes macerated—the orifices of air vessels in the roots and branches—the orifices of the sap vessels in do.—the cortext or bark of trees in general—the vesicular substance of cork in particular—the ligenous fibres in the internal bark—the spiral fibres of the vessels in a vine leaf—the web-like warp and woof in rotten wood—the pith of elder, and other like plants—the transverse section of the root of fern, &c.—the involucra, or covering of gems or buds of trees—the aromatic balls on leaves of sage, thyme, mint, &c.—the catenary pearls on sow-thistle leaves, &c.—the pellicle, or thin skin of macerated leaves—the papillæ and pores in the pellicle of the houseleek—the particles of the parenchyma of macerated leaves—the ramification of vessels in do.—the duplicature of vessels in do.—the transparent blades of grass, corn, &c.—the stings of nettles, and their juice or liquor—the unguiculated tenters, or hooks of clivers, &c.—the stamina on the young shoots of filbert trees—the lanugo, or down, on the leaves of plants—the small flowers of plants in general—the colors of the petela, or leaves—the farina or dust on the stamina—the style, matrix, &c. in the attire of the flowers—the succulent pulpy part of the fruit—the small seeds of plants in general—the seeds of fern, heart's tongue, &c. in particular—the seeds on the stems of mushrooms—the whole of sea plants of every kind—the variety in the surface of coralines—the particular texture of sponge—the minutest shells of every sort.

IV. The fourth class of objects proper for the microscope are of a miscellaneous nature, the principal of which here follow: The edge of a razor, penknife, &c.—the point of a needle, pin, &c.—the polished surface of metals—the print, or writing, on paper—the substance of paper itself—the contexture of linen, cloth, &c. the finest sorts of sand—the particles of different kinds of earth—the various colored particles of mundick—the surface and substance of ores and metals—the efflorescences of sparry exudations—the salts of sea-water evaporated—the salts of vegetable lixivia—the salts of animal substances—the salts of crystals of all metals—the crystalization of salts—the parts of the smallest flakes of snow—the hexagonal cups of white frost—the frosty vegetation on glass windows—the effervescence betwixt acids and alkalies—the ignited particles in striking fire—the ashes of burnt paper, linen, &c.—the teeth of fine files, rasps, &c.—the threads on the finest screws—the smallest microscopic glasses themselves.

[*From the American Farmer.*]

CORN RAISED ON NEW AND OLD LAND.

HAMILTON CO., Ohio, Dec. 1, 1832.

Mr. Smith: The following conversation (or something like it) took place a few days ago, between two farmers, on the banks of the Ohio. It is submitted to the editor of the American Farmer, or his correspondents, for an opinion, founded on the laws of vegetable physiology.

It is perhaps necessary to state, that a great deal of corn hereabouts was overtaken by frost, while yet green. This has happened especially in the overflowed bottoms of the river, where a number of reasons combined to produce this state of things, viz.: the prodigious flood of February last, sweeping away fences which had to be rebuilt before planting—the necessity of replanting several times, in consequence of bad seed corn, whose germinating principle had been destroyed by the unexampled severity of last winter—and, thirdly, the succeeding droughts in the early part of summer.

A. Well, neighbor B. how goes it? I'm told you have plenty of *soft corn* this year, to feed out to your favorites and old cows.

B. Plenty, much more than I want: but I am glad to learn that you have none.

A. No, no, not I; I was'nt born in a corn-crib for nothing.

B. Well, I wish you would let me into the secret. I grant, your crops are generally good, but I will not admit that you are more industrious than I.

A. Not at all; on the contrary—I think you are more stirring, but, from the nature of your farm, you are obliged to plant every year in new ground. Now, my only secret is to plant in old ground, and I never fear having roasting ears in November.

B. "Obliged to plant in new ground?" Why you speak of this as a misfortune. I thought this was what every corn-grower desired: I am sure it is what brought me to the west.

A. *Take care.* Our old fields here are not like your old fields t'other side of the mountains. *I know* that corn ripens sooner here in ground that has been cleared for twenty or thirty years than it does in land planted for the first time, or which has not been under the plough for more than four or five years.

B. But how can that be: the grain comes up sooner in the new ground—grows faster—then why should it not perfect itself, and ripen sooner than that which is more tardy in taking these necessary steps.

A. Oh, you must not ask me the reason of things: all I can say is, that such is the case. I state facts—let others who have more learning, and more leisure, study into the "why and because." I say then from experience, that you may plant the same sort of corn, on the same day, in adjoining fields (an old and a new one), give them both the same attention, and in the fall the crop in the old field will be fit to gather,—while that in the new is still *green, and growing.*

B. But is not this the reason, that in new ground, as generally cleared here, there is a great deal of shade yet remaining on the land, from standing trees.

A. I cannot tell; but I have a notion that if you cut your new fields *smack smooth*, and even grub up every stump, that still your corn will not ripen as soon as mine.

B. Well, suppose we leave the matter to the editor of the American Farmer. These "philosophers, whose trade is not to do any thing, but to observe every thing," can sometimes see farther into a mill-stone than common folks. Perhaps he will explain the matter.

A. Agreed—and in the mean time, neighbor, as you have more of this *soft corn* than you know what to do with, and I have none, you can send your boys with a few loads over to my house, and I will give you sound corn in return. Between us we can feed it all out before it spoils.

B. Thank you heartily, and I hope you will let me know whenever I can return the favor.

The reference of the above question to the Editor of the American Farmer, or his correspondents, is very complimentary, and of course we can do no less than give our opinion. Our correspondents will be pleased also to take the matter into consideration, and favor us with their verdict. Without intending the least exclusiveness in the selection, we would respectfully ask "D. T." to favor us with his views on the subject—promising, thnt the respectability of the genileman who furnishes the subject for discussion, precludes all idea of a fictitious case having been made in the above dialogue.

To have enabled us to make a perfect investigation of the case, and hence to arrive at a satisfactory conclusion, the peculiar nature of the soils in which this phenomenon in the progress of vegetation takes place, should have been particularly stated; if it occurs on all western soils, whether high or low, midland and prairie, this also should have been stated, From what we have heard of western soils. we infer that they are generally composed of a very large proportion of vegetable matter; that the growth of timber is very luxuriant, and the

forests quite dense, and consequently the rays of the sun penetrate to the surface of the earth very rarely. When such lands are first cleared, there will of course be an over-abundance of crude vegetable matter, and a degree of coldness and inertness in the soil, unfavorable to the rapid maturity of fruits, such as the grains of corn, &c. Hence, in the forepart of the season, the plants grow rapidly, owing to an abundant supply of moisture and crude nutriment for the supply of the succulent plant; but the unfavorable condition of the soil above alluded to, prevents the action of the sun's rays, or rather retards it to a late period of the season. We see this theory illustrated every year, in pieces of ground accidentally over-manured. Where there has been an excess of manure dropped, or where a spot of ground has received the washings of a stable yard, we find both wheat and corn, and indeed all other crops, retarded in their maturity, though much increased in succulence, and the size of the plants. Now in the case which is the subject of the above dialogue, we think this is the proper explanation; and this conclusion will be rendered the more obvious, if the maturity of the corn is accelerated by each subsequent year's cultivation on the newly cleared land, which we infer is the case, viz. if the corn ripens the second year a little earlier than it did the first, and the third earlier than the second, &c. then we are authorised to conclude, that the exposure of the soil to the action of the sun, air and frost, by clearing off the mass of vegetation, that excluded the action of these powerful agents, by breaking up the soil by ploughing, &c. has had the effect of causing the proper fermentation of the crude vegetable matter, and thus preparing it for the nutriment of plants, of warming and enlivening the soil, &c. This would of course take place more and more every year, till the soil is brought to that state most favorable to the maturity of vegetation.

Different situations of soils as to altitude, and different compositions of soils, also make a great difference in the time of the maturity of vegetation. It is a well known fact, that within a circle of ten miles round Baltimore, the city being the centre, there is as much as fifteen days difference in the season of vegetable maturity. Five miles south of Baltimore, where there is a light sandy soil, almost level with the sea, corn, peas, and all early vegetables are raised for our market and brought here a fortnight to three weeks earlier than they can be obtained one mile north of the city. On the north side of the city the soil is cold and stiff, and elevated from one hundred to three hundred feet above the sea.

Our respected correspondents must excuse the above hasty sketch of our opinions, and should it prove unsatisfactory, they must charge the failure to their own misfortune in the selection of the arbiter.

[*From the United Service Journal for April.*]

STEAM VESSELS OF WAR.

Sir,—To render steamboats fit for war, requires a better combination of construction and arming than our official people seem to be aware of. The Salamander at Sheerness, and the Dee, at Woolwich, will both be useless as men of war; the former has sufficient depth of hold, but is built so sharp that she will not stow more than ten day's fuel when her stores and guns are on board; the latter is sufficiently flat, but so shallow that she also will stow little more than the former; and I understand those at Plymouth and Chatham are in the same predicament. A steam vessel of war ought neither to be so fine as a sailing vessel, nor, on the other hand, have the capacity of an Indiaman; in the first case, she would not stow a sufficient quantity of fuel, and would draw too much water for most purposes—in the latter case she would not go with sufficient rapidity. Her floor should not be quite flat, but nearly so; its length should occupy half the vessel, the form of the bow and run should occupy the other half; the dimensions of the vessels built are thirty feet wide, and a hundred and sixty-five feet long; had they been twenty feet deep, and built in the above form, they would have been efficient vessels. I beg it to be fully understood, that I do not propose this as a vessel offering the least resistance in the water, but as one combining the requisites necessary for a steam man-of-war; such a vessel, when light, would draw little more than four feet water, without including the keel, whose depth should be according to circumstances, and quite independent of her construction. Her engines and boilers would immerse her between six and seven feet, and with about eight hundred tons of coals she would draw about fourteen, having her gun deck six feet above water at her greatest loading. With a two hundred horse engine, she would consume twenty tons of coals a day, and if they were good, with great care, something less. The shaft should be as close to the deck as possible, and the diameter of the wheels about twenty feet; when loaded, to fourteen, the paddle boards should shift up, so as to reduce the diameter of the wheels about fifteen feet; as the coal was expended, the boards should be shifted down till they came to their full extent; the coal boxes should be fitted in compartments, to receive water, in order that the wheels may remain sufficiently immersed as the coals were expended. The engine and boilers should be secured against shot, which has not been thought of in any of our vessels; no man will be found to attend them in their present state; men have long made up their minds on going into action, to be killed or wounded, but I never heard of any who are ready to be boiled. It has been proved that a combination of oak timber, iron plates, bales of linen, leather, or reams of paper, five feet thick, would protect the boiler and engine against an eighteen pound shot, and without that protection a steamboat is entirely useless in war. The wheels must of course be exposed; but if the naves, which are at present of cast, were made of wrought iron, and the arms of the wheels connected with plates, it would require many shot to disable them. The main shaft would be the only vulnerable part, and if the guards which support it are considerably rounded, or, indeed, made like a cuirass, and covered with plate iron, they would glance off any shot. With these precautions, wheels would be less subject to accidents than either masts or yards. Experience has proved beyond a doubt, that the fittest vessels for sea are those constructed with the wheels buried in the side, as the Irish steamers are. I believe the Salamander is built in this manner; the spencing of the Dee only covers one half the wheels—they are a great deal too wide. She will certainly go the faster in the river Thames (which is the only thing the engineers and builders think of); but in rough weather, such wheels will never be under command of the engines. I am not aware how it is intended to arm our steamboats; I should propose as many heavy guns on pivots as possible; on the upper deck and between decks, two bow-chasers: no arrangement of that nature seems to be intended in those now building. They should be rigged as three masted schooners, with the lower masts in two, having topsails, topgallant sails, and royals, and all the necessary sails for common purposes, which, with the exception of the lower part of the lower masts, could be got down when it was necessary to steam against the wind. I am, &c.

A GREAT ADMIRER OF STEAMBOATS.

FRENCH MANNER OF WASHING CASHMERE SHAWLS.—1st, Wash the shawl thoroughly with clear soft water and white soap. 2d, Beat up six yolks of eggs, and mix them in clear cold water, in which wash the shawl. 3d, Wash the shawl in several waters, until all the soap and yolks of eggs it has imbibed disappear. 4th, Stretch it well on a light cloth or clean carpet, many pins, the more the better, and then rub it well with silk. If this is done with care, the shawl will look like a new one.

THE FUELISIA TREE.—Mr. Shepherd, the respectable and well-informed conservator of the Botanical Gardens at Liverpool, gave the following curious account of the introduction of that elegant little flowering shrub, the Fuelisir, into our English green-houses and parlour windows:—Old Mr. Lee, a nurseryman and gardener near London, well known 50 or 60 years ago, was one day showing his variegated treasures to a friend, who suddenly turned to him and declared—"Well, you have not in all your collection a prettier flower than I saw this morning in Wapping." "No! and pray what was this phœnix like?"—"Why, the plant was elegant, and the flowers hung in rows like tassels from the pendant branches; their color, the richest crimson, in the centre a fold of deep purple," and so forth. Particular directionss being demanded and given, Mr. Lee posted off to the place, where he saw and at once perceived that the plant was new in this part of the world. He saw and admired. Entering the house,—"My good woman, this is a nice plant: I should like to buy it." "Ah, sir, I could not sell it for no money; for it was brought me from the West Indies by my husband, who has now left me again, and I must keep it for his sake." "But I must have it." "No, Sir!" "Here (emptying his pockets) is gold, silver, and copper," (his stock was something more than eight guineas.) "Well-a-day, but this is a power of money, sure and sure!" "'Tis yours, and the plant is mine; and, my good dame, you shall have one of the first young ones I rear, to keep for your husband's sake." "Alack! alack!" "You shall, I say, by ——!" A coach was called, in which was safely deposited our florist, and his seeming dear purchase. His first work was to pull off, and utterly destroy, every vestige of blossom and blossom-bud; it was divided into cuttings, which were forced into bark-beds and hot-beds, were redivided and subdivided. Every effort was used to multiply the plant. By the commencement of the next flowering season, Mr. Lee was the delighted possessor of 300 fuelisia plants, all giving promise of blossom. The two which opened first were removed into his show-house.—A lady came. "Why, Mr. Lee, my dear Mr. Lee, where did you get this charming flower?" "Hem! 'tis a new thing, my lady; pretty, is it not?" "Pretty! 'tis lovely! Its price?" "A guinea; thank your ladyship!"—and one of the two plants stood proudly in her ladyship's boudoir. "My dear Charlotte! where did you get," &c. &c. "Oh, 'tis a new thing; I saw it at old Lee's: pretty, is it not?"—"Pretty? 'tis beautiful! its price?" "A guinea—there was another left." The visitor's horses smoked off to the suburb; a third flowering-plant stood on the spot whence the first had been taken. The second guinea was paid, and the second chosen fucia adorned the drawing-room of her second ladyship.—The scene was repeated, as new comers saw and were attracted by the beauty of the plant. New chariots flew to the gates of old Lee's nursery grounds. Two fucias, young, graceful, and bursting into healthy flower, were constantly seen on the same spot, in his repository. He neglected not to gladden the faithful satlor's wife with his promised gift; but ere the flower season closed, three hundred golden guineas clinked in his purse, the produce of the single shrub of the window in Wapping; the reward of the taste, decision, skill, and perseverance, of old Mr. Lee.

[*From Cobb's Manual on Culture of Silk, &c.*]

ON REARING SILK-WORMS.

The silk insect affords a display of the wisdom of Divine Providence in the adaptation of means to ends, calculated to excite high interest and admiration.

The extraordinary effect produced by this little animal in the short space of six weeks is no less than the conversion of the vegetable substance of the mulberry leaf into threads of rich and durable silk. Well might the Emperor Justinian be astonished to find that the rich and beautiful material of his magnificent robes was first produced and worn by this feeble insect; and well might he repay with munificence the monks by whose exertions the eggs of the silk worm were smuggled in a hollow cane from India to Constantinople. This hollow cane was the ark whence came out the germ of those numerous tribes of this insect which have spread over the whole of Europe, and whose descendants are now fast settling in these United States. Let us commence with the eggs of this insect, and trace its operations, its wants, and various changes, till it forms the cocoon, from which proceeds the moth, which in its turn produces the egg.

The Eggs.—The eggs are of small size. When first laid, they are of a pale yellow color, but in three or four days turn to a light slate color, and subsequently to a dull brownish slate color. Those which remain yellow have not been fecundated, and of course are worthless. The most proper place for keeping the eggs until they are wanted for hatching is a dry cellar. They should be kept in a tight box, to protect them from mice or insects, and dry, so that the mould and mildew may not injure them.

The Hatching, Leaves, &c.—The advance of the season determines the time of hatching the eggs. As soon as the leaf of the mulberry begins to unfold—which is generally in this climate (New-England) the latter part of May—and you observe that there is a prospect of having a sufficient quantity of food, it is time to expose the eggs to hatch. No other process is necessary than to expose them to the air in a room; they hatch voluntarily in a day or two after the exposure. Various modes are adopted in Europe—hatching them in ovens, carrying them about the person, &c.—but nothing of that kind is necessary here.

It is best to preserve those insects for rearing, that come out as nearly at the same time as possible. As soon as the worms begin to appear, lay over them young and tender mulberry leaves; they will soon attach themselves to the leaves, and by taking hold of the stems of the leaves you may remove them easily. They ought now to be supplied with fresh tender leaves three times a day. As the leaves when very young will dry so much in a short time, if exposed to the air, as to be unfit for use, you may put them in a glazed vessel, or keep them covered in a cellar or cool place: by which means the leaves may be kept good for two or three days.* Besides, it is well to have always in your house at a time a stock of leaves, sufficient at least for three days' provision for your worms in case of wet weather. If leaves are given when wet, they will cause disease. Be careful never to pull the leaves when wet, either with rain or dew, except on absolute necessity, and in that case you must spread them and turn them, that the leaves may be perfectly dry before you give them to the worms; rats, mice, spiders, ants, and fowls, are very destructive to the worms: care must be taken, therefore, to keep them out of the way of all such enemies.

The Nursery, Shelves, &c.—In Europe laboratories have been constructed with great care and expense; but, however convenient these may be, they are by no means necessary to success in rearing silk-worms: almost any building will answer for that purpose. I have reared them myself with success in a barn, in my cellar kitchen, and other rooms of my dwelling house, and in the lower story of Tremont House in Boston. It was found in France that the cocoons brought to market by the peasants, raised in hovels so full of cracks as easily to be seen through and to admit the air freely, were richer and heavier than those reared in palaces and in the confined rooms of dwellings in cities.* The apparatus of the Rev. Mr. Swain, I should think might be worth adopting, for those who are beginning on a small scale; in fact I have had something like it constructed for my own use. This apparatus consists of a wooden frame, four feet two inches high, each side; sixteen inches and a half wide, divided into eight partitions by small pieces of wood, which form grooves in which the slides run, and are thus easily thrust in or drawn out of the frame.

The upper slide is of paper only and designed to receive the worms as soon as hatched; the others are of wicker work, the opening being about a quarter of an inch square; under each of these are slides. This occupies little space and is neat, and the persons using it can easily remove the litter. I have used three tiers of rough pine boards fixed upon upright posts, about four feet in width, one above the other, with a space between of two and a half feet, affording room sufficient to pass all round the frame, so that I could conveniently reach any part of it. In making the shelves, it is well to have the lowest one six inches broader than the one above it, and to make the same difference in the other shelves above, so as to break the fall of such worms as happen to tumble down. A good form for the shelves is that adopted by Mr. J. Y. Tomkins, of Baltimore, and which I saw in the nursery of Gideon B. Smith, Esq. of that place. It is about 2½ feet wide, by five or six long, made of thin boards, with a piece two inches wide nailed flat on the upper edge along the sides and ends, with legs about a foot long in the corners. The legs do not pass through the table, but leave a part of the hole on the upper side for the feet of another table to set in. Thus contrived, five or six of these tables are set one above another, and are taken down, cleaned and again set up with facility.—One of these shelves will accommodate 500 worms.† It might be as well to put old newspapers on the shelves, which might be taken off whenever it was necessary to clean the worms, and then replaced.—Thus I have done.

The Different Ages, Moulting, &c.—There are several varieties of silk-worms.‡ The most common varieties change their skins four different times. These changes are called moultings, and the intervening times the different ages. The time requisite for the several changes depends greatly on the temperature. If the weather is warm, they will generally happen as follows: the first moulting on the fourth or fifth day after the hatching—the second begins on the eighth day—the third on the thirteenth and fourteenth days—and the last change on the twenty-second.

The fifth age lasts about ten days; at the end of which the worms have reached their ultimate growth, being three inches in length, and are prepared to spin their cocoons. Thus thirty-two days intervene between the hatching and the beginning of the cocoon, and I have known the period retarded to sixty days. These changes will only be noticed by accurate observers.

Feeding, clearing the Litter, &c.—Too many leaves should not be given to them at once, and the leaves given should be spread very thin, because, if put on too thick, a great number of the worms when small will run the risk of being lost and carried out amongst the litter.—When the worms are in the first age, you need only clean the litter once or twice, as you find it necessary. During the whole of the first age, the leaves of the young plants of the mulberry, as being the tenderest, are preferable to the leaves of older trees for the food of the young worms. It is well therefore to sow some mulberry seed every year so as to have a succession of young plants. During the temporary sickness produced by changing of the skin they should be fed with a very sparing hand. The signs by which it is known that worms are sick, and about to change their skins, are these: they hold their heads up, are motionless, and appear to sleep;—this should be noticed.

During the second age it is advisable still to continue to feed your worms with leaves from the young plants, as they are still preferable for them. You must now begin to be attentive to clear away the litter from time to time, so as to prevent all danger from its heating, which proves highly injurious, though some people never clear away the litter at all. These insects are remarkably fond of cleanliness, which besides helps to enliven them and give them a keen appetite for the leaves that are given them. The litter is taken away in the following manner: you scatter some fresh leaves upon one corner of the shelf, to which the worms having attached themselves, which they will readily do, you then take up the worms by means of the leaves and stalks they cling to, leaving the litter underneath. Having thus taken up all the worms from that corner and placed them in a clean place, you then clear away the litter from that corner and carefully sweep together with a little broom or wing all the dirt, which you remove entirely; you then remove the worms next adjoining to the clean place thus prepared and put them into it; in this manner you proceed with the rest.*

During the third age the full grown leaves of the largest tree may be given—though it would be well to reserve the largest and toughest leaves till the last age, when they are the most voracious. During the third age, the litter should be removed at least three or four times; worms that die or appear to be diseased should be immediately removed.

The same treatment will be required during the fourth and fifth ages as in the preceding.—As they advance in age the greater will be the

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* Mr. D'H. proposes the following method to preserve leaves: Put them under cover on a brick pavement, or gravelled floor; turn them over, and place them further, where it is not damp, (for they always leave a dampness where they lie,) three or four times a day, or an hour before you feed the worms; you may thus keep them three or four days. The leaf wants air to keep fresh.

* I saw at Philadelphia on the 21st of June last, worms raised by Mr. D'Homergue in a yard of mulberry trees, which bore heavy rains and thunder storms, as well as cold windy days, a few of which spun in 30 days, and produced excellent cocoons. They began to mount 32 days after hatching. I also saw a few worms raised from eggs which were laid on the outside of a brick wall, in a northern exposure, which had stood all the severity of the winter. I saw many thousands of excellent cocoons, raised by Mr. Du Ponceau, under the care of Mr. D'Homergue, in the heart of the city of Philadelphia. I tried some on trees in the open air the present season, but they did not succeed; they attained, however, to a considerable size, but the frequent rains destroyed them.

† Farmers, however, who would make it profitable, should raise one or two hundred thousand, and rough boards will make the cheapest and most ready shelves for use on an extensive scale.

‡ I saw in the Nursery of Gideon B. Smith, Esq. of Baltimore, four different varieties. I would recommend, as most profitable for rearing, the large white.

* If the worms are laid on a newspaper, it is easy to take out the newspaper, lay it on a table, and transport the worms, who generally adhere to the leaves and branches, to another newspaper, which is put on the shelf after sweeping it. The litter on the other one may then be thrown away.

proportion of food required and the oftener the litter must be removed; by these means the process is sooner brought to a conclusion, and the worms always kept in high health and appetite. During the four or five days previous to their rising, the worms consume an incredible quantity of leaves, eating with great voracity, and at this time the labor of tending them is most fatiguing. You will know when the worms are ripe or ready to rise and form their cocoons, by observing them with attention when you give fresh leaves. Those that are ripe, instead of eating, avoid the fresh leaves, and run over them as fast as they can wander about, and try to climb; they will look transparent, of the color of a green gage plum, and somewhat diminished in size.

In the fifth age the worms should have new leaves as often as the old ones are consumed, until they are observed to creep on the leaves without eating. At night they should have a double portion.

Preparations for the Cocoons.—Previous to the rising of the worms, some little arches or cabins should have been prepared of brushwood or broom corn, by setting their branches with their tops spread, pressing against the bottom of the upper shelf to hold them in their position.—The worms will readily find and climb these little trees and spin their cocoons in them; the worms will be three or four days spinning their cocoons,* and they will all generally be finished in eight days. The brush may then be taken down, the cocoons taken off, cleared of the loose tow and prepared for reeling. I have found that the branches of the oak, with the leaves on, answered the purpose for these arches very well, as the leaves are strong, and do not crumble in taking off the silk. They should be cut some days before hand, and be dry when used. Some prefer to have the brushwood entirely stripped of its leaves.—Mr. Smith, of Baltimore, uses and recommends the broom corn.

Seed Cocoons.—Those cocoons that are intended for seed may be stripped of their tow and strung upon a thread—care being taken not to pierce entirely through the cocoons—and hung up until such time as the moths come out, which will be in one or two weeks, when the males and females will couple; they may be taken by the wings in pairs without separating them, and placed on large sheets of paper, (old newspapers will do,) where they are to remain; as many pairs of moths as can conveniently lie on the papers, may be placed there. The room in which these are placed, should be secured from mice and ants, and the sun should not be permitted to shine on them in any stage of their existence; as soon as the moths on one sheet have done laying their eggs, it should be folded up and put down cellar, or in some cool, dry place, until wanted for use next spring.

The moths are in the form of a grayish white butterfly, and generally begin to lay their eggs in 24 to 36 hours after leaving the cocoon. Each female moth will lay from three to four hundred eggs, generally handsomely disposed and firmly attached to the paper in a circular form.

Should the eggs be permitted to remain exposed to the warm weather, they will sometimes hatch the same season, and unless another crop be desired, they will be lost. The moths eat nothing after leaving the cocoons, and die in a few days after depositing the eggs.

Diseases of Silk Worms.—The foreign writers enumerate and describe a variety of diseases to which silk worms are liable in their different ages, and particularly in the fifth, which all agree to be most critical. But to all these diseases they prescribe the same means of prevention and the same remedies when they have occurred. It is therefore unnecessary to describe their various symptoms, as it would lead to no good practical result.

The diseases of silk worms generally arise from the want of sufficient air and space, from their not being kept dry, and being fed with damp leaves, and also from their not being kept sufficiently clean, particularly in the fifth age. The fermentation of their litter, the dampness and the bad air which it occasions, are the most frequent causes of mortality among them. The greatest care therefore should be taken to keep them constantly clean and dry, and to give them a sufficient quantity of space and air; a current of air in fine warm days should always be let into their nurseries.

If, notwithstanding all the care taken, some general sickness should declare itself among them, the remedy recommended by the writers, is, to give them a change of air, by transporting them into another room. But this may not always be convenient. It is with these animals, as with our species, easier to prevent diseases than to cure them. If nothing better can be done, the diseased worms must be thrown away. The chloride of lime and soda have been used with good effect in some nurseries to cleanse the air.

Before the worms begin to mount and spin their cocoons, they void themselves of their excrements, and they generally do it on or near the edge of the board on which they are placed. Those who have not strength enough to cast off their excrements, die in the attempt, and in the morning numbers of them are found dead. They should be carefully taken up and thrown away. When many are found in that condition, it is a sign that the litter is fermenting and that a cleaning is necessary.

It is possible that there may be diseases of the silk worms peculiar to the climate. Experience will enlighten us on the subject. I have heard that ladies in one of our Southern States have lost all their worms this year, from the *plague getting in among them.* It is certain that there are epidemic disorders by which whole nurseries of silk worms are destroyed. But these are of rare occurrence in our country; and it is hoped that they may be prevented by a careful attention to the rules prescribed.

Comparative advantages of heating by Hot Water, Hot Air, and Steam. From minutes of recent conversations at the Institution of Civil Engineers.

Mr. Turrell said, that where steam was employed, it was requisite that a strong heat should be kept up under the boiler, in order to have a continued flow through the pipes, for as soon as the fire fell low, the steam was condensed, and they, becoming empty, were no longer serviceable for heating. With water, on the contrary, so long as there remained the smallest heat in the boiler, that temperature would be equally distributed over the whole house; the water still continuing to circulate, until it cooled down to the temperature of the atmosphere.

Mr. Simpson said, that the method of heating rooms by warm water possessed a decided superiority over any other, from the comparative security it afforded against accidents by fire; he had known instances of hot water pipes being introduced into bankers' houses, (where they are extremely fearful of fire,) after they had objected to the use of flues, or pipes conveying heated air, or steam.

Mr. Cottam said, that no experiments had been tried hitherto, by which could be ascertained the quantity of fuel necessary to produce a given temperature on the pipe, or in the atmosphere of a room which was heated by its means. He thought it very desirable that a statement of the relative consumption of fuel should be obtained, as, in some observations on the performance of a hot water apparatus attached to a pinery, that consideration was overlooked. He could state one instance of a house that he had fitted up with a set of hot water pipes, by which a saving of one third was effected in the consumption of fuel; here, however, the flue, which was in use previously, had been of faulty construction; this, therefore, ought not to be considered as decisive. He stated, that no beneficial effect was produced by leading the flue from the fire along the brick wall; there was no apparent increase of temperature in the house.

Mr. Sibley described a hot water apparatus he had fitted up, which warms several rooms, boils a cistern, and heats a bath on the top of his house: this is managed by a boiler being placed behind the kitchen fire, and which, in fact, forms the back of the kitchen range; from this a common two inch gas pipe is conducted round the rooms to the top of the house, a height of fifty feet, and returned to the boiler. He stated that although considerable heat must be withdrawn from the fire by this apparatus, and the consumption of fuel probably increased, yet no inconvenience was felt from its operation.

Mr. Turrell observed, that he had been in the practice for many years of heating his office with a hot air stove; it was found to create an unpleasant smell, and the atmosphere of the room eventually proved extremely hurtful to the lungs. He adopted a plan of evaporating a portion of water during the whole of the time the stove was in operation, thereby keeping up a proper degree of moisture in the atmospheric air; this removed every injurious effect which was before observable.

Mr. Field said his offices were heated by means of steam pipes, and that it created a most unpleasant smell, accompanied by a feeling of oppression on the lungs. He thought the hot water preferable, on account of the greater uniformity of temperature which was afforded, and always of a very moderate degree: that from steam pipes, on the contrary, was always high, and more difficult to regulate.

Mr. Clegg had been employed to correct the unpleasant smell, created by the air in coming in contact with the red hot surface of iron stoves. He adopted a method of covering the stove with a kind of glazed tiles, which was found to be very effective.

Mr. Hawkins had known an instance of a cotton mill, in which it was found impracticable to spin any fine description of thread, on account of the state of the atmosphere, produced by the artificial heat. A scientific man gave as his opinion, that a deficiency of moisture affected the electrical condition of the atmosphere, and was the cause of the difficulty of working the cotton into fine thread. Mr. Hawkins was of opinion that the oppressive feeling spoken of was more to be attributed to the circumstance of a supply of moisture being necessary for conducting the electricity from the human body, than to the fact of the air being burnt or decomposed.—[Athenæum.]

[*From the New-England Farmer.*]

NEW-ENGLAND PORK.

Mr. Fessenden,—Mr. Asa Littlefield, of Framingham, slaughtered a hog last week, that weighed when dressed 678 lbs.

It was weighed at the scales of Wheeler & Stone, and sold to Silvanus Phipps, of Framingham; the hog was between eighteen and nineteen months old. The lovers of fat pork are invited to call and see so fair a specimen of New-England production.

Yours, W. B.

December 10, 1832.

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* Dr. Pascalis, of New-York, a gentleman of great literary reputation and high scientific attainments, has by the use of electricity been enabled to hasten the progress of silk insects; and worms reared by him, to which this powerful agent was applied, have spun their cocoons in 27 days. I have never made any experiments in this way myself, but doubt not that this as well as many other improvements, will be introduced. The same gentleman has also recommended in his valuable work, the Silk Culturist, (No. 2, page 105,) artificial mounting slides, upon which the worms may mount and spin their cocoons. Those who have curiosity to see these improvements, will find a drawing of them in the work referred to.

[*From the New-England Farmer.*]

TRANSACTIONS OF THE MASSACHUSETTS HORTICULTURAL SOCIETY.

At a special meeting of the Massachusetts Horticultural Society, held on Saturday, Dec. 22d, 1832—

William Hume Cowan, of Brookline,
George C. Barrett, " Boston,
Joshua Crane, " "

were admitted subscription members.

Professor Menore, Director of the Botanic Garden at Naples, and William Fox Strangways, Esq. British Secretary of Legation at the Court of Naples, were elected corresponding members.

Resolved, That the thanks of the Society be presented to M. C. Perry, Esq. for his active services and kind attentions to the interests of the Society.

Resolved, That the box of seeds now presented by M. C. Perry, Esq. to the Society, be confided to the care of Mr. David Haggerston.

Resolved, That the letter from Messrs. Baumann & Brothers be published in the New England Farmer, and that their catalogue of plants be referred to the standing committees on fruits and flowers, for the selection therefrom of such plants as may be desirable for the society.

Adjourned to Saturday, Jan. 5, 1833.

United States' ship Concord, Portsmouth, N. H. Dec. 10th, 1832.

SIR,—I transmit to the Massachusetts Horticultural Society a box and parcel entrusted to my charge by W. Fox Strangways, Esq. British Secretary of Legation at the court of his Sicilian Majesty, which were received by him from Professor Tenore, director of the Botanic Gardeu at Naples.

You will please to observe, by the copy of a note (herewith enclosed) addressed by Mr. Strangways to J. Nelson, Esq. U. S. Charge d'Affaires at Naples, that I am requested by Professor Tenore to bestow this collection of seeds and roots upon one of the public gardens in the United States. As I know of no public botanic gardens in our country, I feel myself at full liberty to gratify my own inclination in placing them at the disposal of the Society of which I have the honor to be a corresponding member.

It may not be improper for me to express the opinion, that both Mr. Strangways and Professor Tenore would be particularly gratified to become corresponding members of your society. They have the reputation of being distinguished botanists, and are gentlemen of the first respectability.

I am, sir, very respectfully, your most obedient servant, M. C. PERRY.

To the Secretary of the
Massachusetts Horticultural Society.

Copy of a Note addressed to J. Nelson, Esq. by W. F. Strangways, British Secretary of Legation at Naples.

SIR,—With this note I take the liberty of sending the box of seeds, &c. which Captain Perry was se obliging as to promise to take to America.

I find Professor Tenore has no regulrr correspondence with any scientific establishment in that country, but on my informing him that Capt. Perry was himself interested in botanical and horticultural pursuits, &c. he begs leave to place it at Capt. P.'s disposal, to be by him bestowed on any public garden he thinks proper.

As he understands and reads English, he would feel much gratified if this opportunity should prove a step to procuring him the correspondence of any scientific man in America.

There is a separate parcel containing catalogues of the botanic garden of Naples, and a list of the roots, seeds, &c. contained in the box. Signed, W. F. STRANGWAYS.

To J. Nelson, Esq.

FRUITS.

Dec. 22, 1832.

Presented by Mr. Robt. Manning, of Salem, *Apples*—Carthouse or Gilpin of Cox, Yellow Bellflower, Moore's Sweeting, Pickman's Pippin, Black Apple, Winter Queen, Codlin, and a Seedling from the Siberian crab about twice the size of the parent fruit, and very fair. *Pears*—Newtown Vergalone, a very desirable fruit for cooking, and an abundant bearer. Per order, E. VOSE.

HORTICULTURAL PREMIUMS.

At a meeting of the Committee of the Massachusetts Horticultural Society on Fruits, on Saturday the 22d December, 1832, the following premiums were awarded:

For the best foreign grapes, cultivated under glass, from a beautiful specimen of white grapes called "Horatio," to Mr. Jacob Tidd, of Roxbury, $5.

For the best foreign grapes of open culture—white chasselas, to Cheever Newhall, Esq. Dorchester, $5.

For the best apples—to Enoch Bartlett, Esq. Roxbury, for a fine collection of fifteen varieties, $4.

The fine specimens of apples presented by Mr. John Mackay, of Weston, were thought by the committee to be very nearly equal to those which obtained the premium.

For the best strawberries, "Downton," to E. Vose, Dorchester, $2.

For the best gooseberries, to Mr. Samuel Walker, of Roxbury, for five valuable varieties—Bank of England, Hopely's Globe, Green Gascoigne, Lancaster Lad, and Milling's Crown Bob, $2.

For the best quinces, orange, to E. Vose, Dorchesler, $2.

In consequence of the very unfavourable season for fruits, few specimens of peaches, pears, cherries, apricots, nectarines, or plums, were presented, and none for which the committee thought themselves justified in awarding a premium.

Per order, E. VOSE, Chairman.

Mr. FESSENDEN,—In the course of the past year, the committee on fruits of the Massachusetts Horticultural Society, by the request of its President, collected scions of fifty-one varieties of the choicest *native fruits* of this country, which they transmitted to the Messrs. Baumann, proprietors of the ancient and very celebrated nurseries at Bollwiller, in France. It is gratifying to learn, that notwithstanding the delays incident to the various transhipments to which they were subject, the scions reached their ultimate destination in good condition. I inclose a translation of a letter received from those gentlemen acknowledging the receipt, for insertion in the Farmer.

Very respectfully, E. VOSE.

Bollwiller, in the Department of the Upper Rhine, France; Sept. 20, 1832.

SIR,—With your respected letter of the 24 December of last year, you have done us the favor to direct to us a box of scions of your most celebrated kinds of fruit trees, which we have received; and although rather late in the season, the scions were in so good a state of preparation, that with the care requisite in similar cases, we have been enabled to reproduce them in our nurseries. We beg you, sir, to accept our grateful acknowledgments for your very aeceptable offering. On the receipt of your esteemed favour, it was too late to propose to you anything of the last season, neither could we speak to you of the extent of our collections from the result of the operations of the next, until our general registry was complete. Since then the catalogue having been published, we hasten to recommend it to you, and we herewith inclose it to J. C. Barnet, Esq. Consul of the United States at Paris, to be forwarded to you the soonest possible. We beg you to receive and examine it; and if you observe in it anything which may be desirable to you, sir, have the goodness to honour us with your commands, and we will hasten to justify your kindness by proving to you that we are not insensible to it.

Accept, in the mean time, the assurance of our desire to be of service to you in our country, and of the high consideration with which you have inspired us.

We have the honour to salute you with respect, and are, sir, your most obedient servants, BAUMANN BROTHERS.

To H. A. S. Dearborn, Esq.
President of the Massachusetts Horticultural Society, at Boston.

PERNICIOUS EFFECTS OF VITIATED RYE.—Rye is liable to be diseased by an insect depositing its animalcula in the grain, which causes it to sprout and produce an excrescence like a cock's spur, of a hard texture. When ground down with the flour, or used in distillation, it proves a mortal poison, and at times has proved a pestilential scourge of Europe. It has been equally fatal in America, and is supposed to have been the chief cause of the plague in London. In 1811 and 1812, a great number of lives were lost from the spurred rye being used as food, and liquor distilled from the rye. The great mortality was chiefly confined to New-York and Vermont. Upwards of twenty thousand victims fell a sacrifice to the ravages produced by that dreadful poison. Meeting after meeting of the faculty took place, to endeavour to discover the cause; and after the most mature deliberation, it was discovered by Dr. Hosack and his party, that it was a poisonous miasma floating in the air, confined to certain prescribed limits, and affecting certain persons, more particularly those that were in the habit of drinking gin: the best apology for their ignorance of the true cause, the ergot or spur red rye. What made their report the more ridiculous was, that there was at that time a fine, clear, black, hard frost, and the healthiest weather that could be imagined. Many of the members were sceptical, and could not believe the report: they thought, that owing to the fine weather it was impossible for the contagion to exist in the air; others were of the same opinion with the doctors. One of the non-contagionists wrote and requested me to go to Albany, where the disorder was then raging, and wishing me to endeavour to discover the cause of the afflicting calamity. On my journey from New-York to Albany, where the Legislature of the state was sitting, I stopped at a place called Kinderhook; and

being cold, contrary to my usual practice, I drank a glass of gin. I had not drank it many minutes before it affected me as if I had taken something boiling hot into my stomach. Although I immediately took an emetic, which produced the most active effects, the poison had taken so firm a hold of my constitution, that my throat and rectum were extremely painful. I had a cold perspiration towards the morning, with a pain in my bones and head, whereas I was in perfect health before I drank the gin. I accused the tavern-keeper of putting poison in the gin: a gentleman of the town who heard me, and had observed that the habitual gin-drinkers in the place had died, seconded me in my charge. The landlord declared he was innocent, and referred us to the distillery. Upon our applying, the distiller was much alarmed at our charge of his putting poison in the gin; and added, it would be his ruin if the report got abroad, in consequence of the great mortality. He took a voluntary oath that he put nothing but the pure grain into his gin, and invited us to see the grain in the still-house loft. We found it on inspection badly cleaned, and probably one-tenth of it spurred rye, or rye vitiated by being infested with the clavus or ergot. I was quite astonished when I saw it, particularly as it was so well described by Dr. Darwin, as being a pestilential scourge in various parts of Europe, producing what is called by Dr. Mason Good, in his History of Medicine, mildew mortification: in America it was vulgarly called the dry rot. On dissection I have observed that the windpipe and rectum were so completely parched by the action of the air stimulating or attracting the effects of the poison to the parts, that when pressed they would give way, and appear like block snuff. I lost no time in repairing to Albany. On my arrival the inhabitants were in mourning, on account of the loss of their relatives and friends, some of whom had risen in health in the morning, had eaten a hearty breakfast, and at noon were in eternity! Such was the rapid effects of that inflammation, which was ascribed by the doctors of New-York to the air of Albany being charged with the damps of death. The members of the assembly of the state had at the time under their consideration, a resolution to enable them to remove the state legislature from Albany; it was expected that the resolution would be carried the same night, to the great and irreparable injury of the inhabitants. To the friend who was waiting for me at the hotel, I communicated the glad tidings of having discovered the cause of the disorder. He immediately ran to the assembly-room, and obtained the members' consent to adjourn the question until the following morning. The tavern where I was was soon crowded by the members and citizens, all anxious to know the cause. It was no sooner communicated, with a detail of my own sufferings, than the members searched the book shops and libraries, and found to their great satisfaction that the ergot was capable of committing ravages upon mankind that I had represented to them. One of the sceptical of the faculty, on being requested to analyze the article, and report on the subject, took a few of his acquaintances some distance into the country, to dine at his father's farm, where an opportunity offered to prove whether the ergot was injurious or not; for a large quantity of it that had been separated from the rye was given to the pigs; and from its fatal effects (as it caused their death the next day) the father became a convert to the opinion. A number of rats, cats, and dogs, also fell sacrifices to its effects, before the sceptical were convinced.—[Whitlaw on the Causes of Inflammation, &c.]

Native Silkworms.—A much respected correspondent in Virginia informs us, that he found two silkworms crawling from beneath the wooden steps of his door. They were near the size of the tobacco worm, of a pea-green colour, with rows of brilliant red spots on the back, sides streaked. The red spots changed to bright yellow before they began to spin. From this description we should judge the worms were the larvæ of what is commonly called the *Luna*, (a large and beautiful moth: they produce cocoons of a coarse drab-coloured silk.) The worms spun cocoons; and our correspondent thinks it not at all improbable, that if they had been fed with the proper food, the silk would have been as fine as that of any other worm. The want of proper food, however, does not make the common silkworms spin coarse silk, but has the contrary effect. The fibre spun by worms stinted in their food is exceedingly fine; so much so that we have seen cocoons spun by worms thus starved, not larger than wren's hegs, and the fibre so attenuated, that it could not be reeled without extreme difficulty.

Our correspondent politely offers to send us the cocoons of the worms above noticed, and we shall take all possible means to breed from them. We have long thought that a valuable kind of silkworm might be obtained from some of our native insects.

Our correspondent says, that in 1801, in a family in Albemarle County, Virginia, the young ladies raised silk enough to make all their own stockings and gloves, and frequently vests for their brothers. The young folks used to sit up late many a winter's night, winding the cocoons out of a noggin of hot water. The required nnmber of cocoons were put into the water, and on being stirred round with a splinter from a fence rail, the ends of the fibres would adhere to the splinter, and then the operation went on smoothly. This is the true method of reeling silk, in miniature, and affords another proof of the simplicity of the operation. He says he thinks he cannot be mistaben in his recollection of the worm, and that it was a large *black hairy* worm. The cocoons were white and yellow, but larger than those of the worms now raised, that the silk was quite as fine, and that the food they were fed on was the common mulberry.—[Amer. Mag.]

Vegetables.—In the early part of the reign of Henry VIII. not a cabbage, turnip, or other edible root, grew in England. Two or three centuries before, certainly, the monasteries had gardens with a variety of vegetables; but nearly all the gardens of the laity were destroyed in the wars between the houses of York and Lancaster. Harrison speaks of wheaten bread as being chiefly used by the gentry for their own tables; and adds, that the artificer and laborer are 'driven to content themselves with horse corne, beanes, peason, oats, tares, and lentiles.' There is no doubt that the average duration of human life was at that period not one half so long as at the present day. The constant use of salted meat, with little or no vegetable addition, doubtless contributed to the shortening of life, to say nothing of the large numbers constantly swept away by pestilence and famine. Till lemon juice was used as a remedy for scurvy amongst our seamen, who also are compelled to use salted meat without green vegetables, the destruction of life in the navy was something incredible. Admiral Hosier buried his ship's companies twice during a West India voyage, in 1726, partly from the unhealthiness of the Spanish coast, but chiefly from the ravages of scurvy. Bad food and want of cleanliness swept away the people of the middle ages, by ravages upon their health, that the limited medical skill of those days could never resist. Matthew Paris, a historian of that period, states that there were in his time twenty or thirty hospitals for lepers in Europe.

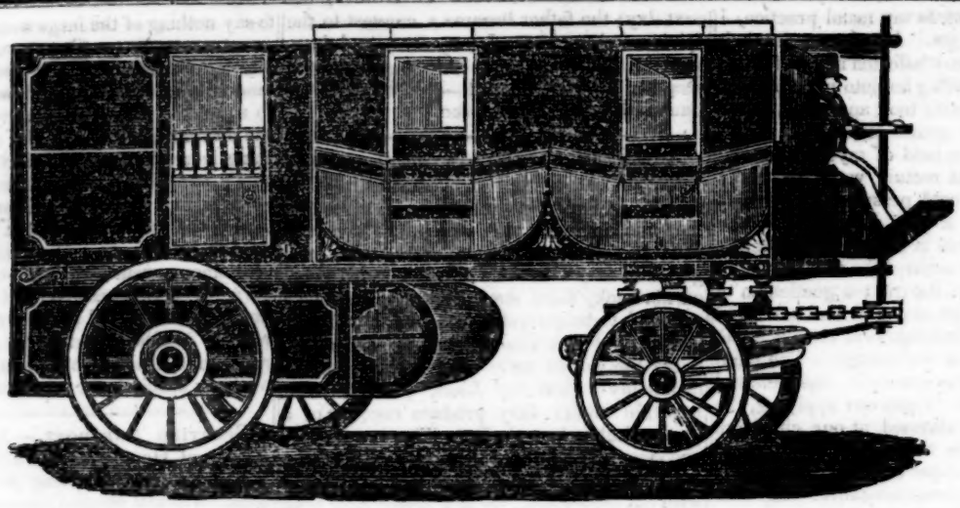
Sporting Anecdote.—As a respectable citizen of Heard county, a few days since, was engaged in removing the rubbish from a piece of newly cleared ground, he discovered a hawk in close pursuit of a partridge; the latter in the rapidity of his flight, in endeavoring to escape from the talons of the hawk, came suddenly and violently in contact with a sharp splinter of the limb of a tree which pierced him through the body. The hawk, with great rapidity closely pursuing his prey, likewise encountered the same splinter, which he also run through his body, and thus clenched himself fast upon the partridge. In this manner they were both taken by my informant.

SPOILT WHEAT.

Many persons are aware of the deleterious effects of damaged wheat upon the human constitution when made into bread and eaten; but it is not generally known, we believe, that it is equally injurious to horses. A gentleman of Putnam Co. informs us, that he lately lost four head of horses in one day, from having eaten wheat partially damaged. The wheat had laid in a pile in his barn floor where it got wet from a leakage in the roof, and had began to spoil. On opening their stomachs, a quantity of undigested wheat was found in each of them, and the coat of the stomach considerably inflamed. They all died within four or five hours after eating the grain. Hogs ate of it without any visible bad effect.—[Southern Planter.]

WOODS AND CHOLERA.

The Danvers physicians, who visited New York to observe the cholera, remark that the disease begins in low, damp, foggy, or filthy situations among the intemperate and the debauched, and that as the atmosphere becomes more filled with the choleric influence, it prostrates individuals of better habits, and visits higher and more healthy situations. They think the progress of the disease in this country confirms the fact noticed by the French physicians in Russia—"that woods, and probably the fir tree (including doubtless the pine and resinous trees) more thon any other, have the property of destroying or neutralizing that unknown cause which generates cholera. Very woody districts in Russia were entirely preserved from this destructive scourge. Kristosky Island, situated among the populous islands of St. Petersburg, and containing three villages, was completely preserved from the disease although communicating daily with the city by a thousand barges. The island is low and damp, but is covered with superb forests.—[Southern Planter.]



[*From the American Railroad Journal, and Advocate of Internal Improvements.*]

We give this week, according to promise, a representation of Walter Hancock's Steam Carriage, with a partial description from the London Mechanics' Magazine, together with a further description by Mr. Hancock himself, taken from his examination by the Committee of the House of Commons. There is also a separate representation of the boiler, of which we gave an interesting account in No. 36, and to which we would again call the attention of our readers, now they have the engravings before them.

Extracts from Mr. Hancock's Examination:

How long have you been running that steam carriage? I dare say about a twelve-month this present coach, but I have been working for hire on the road only a month.

Are you the inventor of that particular description of engine that you make use of? Yes.

Will you state the progress which you have made in the improvement of your steam carriage? The principal improvement I consider is in the boiler: that of constructing the boiler much lighter than any that are now in use.

Will you be kind enough to give a general outline of your plan? There are flat chambers which are placed side by side, the chambers being about two inches thick, and there is a space between each two inches; there are ten chambers and ten flues, and under the flues there is six square feet of fire, which is the dimension of the boiler top and bottom. The chambers are filled from half full to two-thirds with water, and the other third is left for steam: there is a communication quite through the chambers, top and bottom: this communication is formed by means of two large bolts, which screw all the chambers together; the bottom bolts the bottom part of the chambers, and the top bolts the top part of the chambers; and by releasing those bolts at any time, the chambers fall apart, and by screwing them they are all made tight again. We have braces to fasten them; the steam is driven out from the centre of one of the flues, and the water is ejected from the pump at the bottom communication for the supply of water.

Does the fire pass between the boxes, or does it pass through them? It passes only between them.

There is no line of communication for the fire made between the boxes? Nothing more than the flue through which the fire passes; the sides of the boilers form the chimneys.

Have you ascertained what pressure such boilers are equal to? I have never gone beyond 400 lbs. on an inch; I have worked it on a road at 400; the average pressure on an inch is from 60 to 100.

At what pressure do you set your safety-valve? Taking the average of roads, I work at about 70 lbs. upon the square inch.

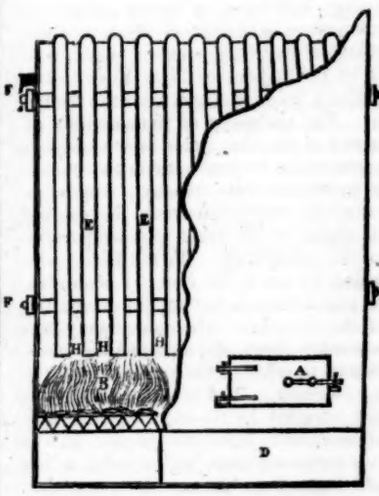
You have calculated how many square feet of boiler? At the present carriage I have 100 square feet of boiler exposed to the fire.

[*From the London Mechanics' Magazine.*]

The engraving on our front page represents a new steam carriage, which Mr. Walter Hancock has just built to run on the road between London and Greenwich. For the following particulars of its construction, we are indebted to Mr. Gordon's valuable Historical and Practical Treatise, reviewed in our last number.

There are two engines, which are placed before the boiler and turned with the stuffing box down, so that the cylinders are uppermost, and the piston and connecting rods below. The crank shaft with two cranks is supported by a flexible frame, which provides for any concussion on rough roads. A chain passes over a sheave on the crank shaft, and over a larger sheave on the hind axletree. The wheels turn loose on the axle, and one or other, or both, are fixed by a clutch when required. This clutch is on the outside of the wheel, and can be screwed out or in, as the case demands, with great facility. The turning of the carriage round to the offside is prepared for, by throwing out the offside clutch, and keeking in the near one; and the turn round to the near side, is prepared for by throwing out the near clutch, and throwing in the offside clutch. A little play is left between the catches in each clutch, so that a winding road may not oblige either wheel to be disengaged; and it is only in a short turn, or a turn round, that the clutch must be shifted, and this can be done in a very small space of time.

The engraving below represents an elevation of the boiler, with part of the casing removed for the purpose of exhibiting the interior structure. A is one of the fire doors, of which there are two. B the fire-place; D the stoke-hole; E E the chambers, constructed of the best wrought iron; F F shows the manner in which all the chambers are bolted together, so as to form a large boiler of many compartments. There are fillets of iron, which keep the individual compartments at a proper distance from each other; and the spaces which these fillets leave are the flues of the boiler, through which the flames ascend, as shown at H H H. All these compartments are connected at the bottom for the purpose of keeping the water in each at the proper level; and at the top the steam is conveyed from each by as many pipes as there are chambers into the steam feed-pipe, by which steam is conveyed to the engines. By this arrangement, the only parts of the boiler which can be dreaded are the sides; but good ties will keep them together. And as to the bottom end, and top of the boiler, which are composed of the edges of these compartments, if one part is burnt out or hurt, it is only that individual compartment which can burst, an its power of doing mischief is not worth notice. The fire is urged by a blower which is driven by a connexion with the engines. The waste steam is blown from the engines into the chimney, and so destroyed. The passengers are carried on the same machine, Mr. Hancock preferring that disposal of the weight to the dragging of it in a carriage behind. The wheels of the carriage are a beautiful exhibition of strength and lightness combined. The spokes are all wedge-shaped, and where they are fastened into the nave abut against each other. Their escape laterally is prevented by a large iron disc at each end of the nave; and these being bolted through, confine the spokes securely in their place.



WHEAT.—The Richmond Whig says, one hundred thousand bushels of wheat have been already ground this season, at Chevallie's (Gallego's) Mills. This is more than any other mill here or elsewhere has ever done by the 8th of December.

TO FATTEN GEESE.—Let them be tied upon boards raised a few inches from the ground, and Indian meal and water placed before them within reach; in one week they will be fit for killing. If the fat from geese is preserved, it will be found altogether superior to hogs'-lard for frying doughnuts.

[*From the Boston Transcript.*]

PREMIUM BUTTER AND CHEESE.—When our farmers can, if they please, make butter that will command *forty-three* cents a pound it is high time that our market should be better supplied. Our dairy-men look too much to quantity and too little to quality. That this is a wretched policy and not only costs them money, but injures their reputation, was practically illustrated the other day, in the case of two persons, residing in the same town and whose farms were within gunshot of each other; they came to the city together, the one with a lot of 400lbs. and the other with a small parcel of about 250. The owner of the 250lbs. sold his butter almost immediately at 22 cents, whilst his neighbor, after wasting two days in search of a purchaser, was compelled to sell his 400 lbs. at *ten cents and a half*, and returned home not a little mortified. All this difference of price arose from the difference of management in the two dairies. In the one they made good, but less—in the other very bad, but more.

That our citizens are willing to pay a round price for butter and cheese of the first quality, is proved by the sale of the parcels to which premiums were awarded at the exhibition yesterday. The number of entries for the premiums for butter was 25, and for cheese 18; of the entries for butter 16 were from Worcester county, 3 from Essex, 2 from Vermont, 2 from Boston, and 2 from New-Hampshire. The entries of cheese were all from the county of Worcester. The premiums were awarded as follows, viz:

For Butter, 1st premium, $100, to Luther Chamberlain, of Westborough. At the sale of this butter, 6 tubs were knocked off at 43*a*43½c. per lb.

2d premium, $50, to Cloud Harvey, of Barnet, (Vt.) sold 7 tubs at 39c.

3d premium, $30, to Richard Hildreth, of Sterling, sold 6 tubs, 32*a*42c.

4th premium, $20, to Oliver Johnson, of Sterling, sold 2 tubs, 35*a*36c.

Old Cheese. 1st premium, $100, to Daniel Hunt, of New Braintree.

2d premium, $50, to John Matthews, of New Braintree.

New Cheese. 1st premium not awarded; 2d premium, $30, Ebenezer Tidd, of New Braintree.

Sale of Butter, from Boylston Farm, 17 tubs 30*a*31c. 6 tubs 25c. and 27 tubs 21*a*25c. Seth Davenport's old Cheese 13, new do. 10½c.

SALT.—A farmer in Missouri asks through the newspapers for the reason why, when the duty on salt has been so much reduced, the price is so much increased? Is it not a fact that high duties often reduce prices, and *vice versa?* Certainly, so far as high or low duties diminish or increase production or consumption. Instance molasses and coffee. Very soon after a duty of ten cents per gallon was laid on molasses, by the tariff of 1828, its selling price declined in the West Indies and the United States—for the distilleries were stopped; and coffee, for a year or two past, though the duty had been reduced from five cents to one cent per pound, has been dearer than it was in several preceding years. Duties may, or may not, enhance the price of articles—for price depends on supply and demand. The advanced price of salt, as above suggested, may be caused by a discouragement of the makers of it in the west, in consequence of a reduction of duty on the imported article. A brisk competition among producers is the surest means of cheapening commodities to consumers. But it is hard to make the people believe that duties on imports are not always taxes imposed on them; and yet a greater or more injurious mistake can hardly be committed on the subject of taxation. Price, besides, is relative. Tens of thousands of persons were starving in Ireland when potatoes were selling for less than one-third of a cent per pound—at which time they were worth in the cities of the United States one and a half cents per pound; but the first had not the means to purchase potatoes, and hence they were dear in Ireland, though cheap in the United States.—[Niles' Reg.]

ON THE SELECTION OF SEEDS.—There are but few farmers who do not readily admit the importance of selecting the very best varieties of seeds, which he intends to plant or sow; still, there are but very few who give it the necessary attention. There are many sorts of seeds which do not require so much nicety in their selection as others; but, still there are none but should receive their due portion of attention—and no variety but will amply reward for the labor bestowed, both in the quality and quantity of the returns. The superiority of which, from this cause, in many instances is truly astonishing. In the Quarterly Journal of Agriculture, published in Edinburgh, a Mr. Sherreff mentions that the variety of Swedish turnip cultivated in East Lothian had, by judicious selection of the roots from which seed was to be saved, been improved in nutritious value upwards of 300 per cent. and he adds—"The difference of produce arising from sowing the seeds of a good and a bad variety of a plant is so great, that it does not seem inconsistent with probability to state that the gross agricultural produce of the country might be augmented in the course of a few years, through the agency of improved seeds, to the amount of 7 per cent.; and as the farmer's home consumption of produce, by such means would be increased nearly 10 per cent. what an enormous fund this forms for maintaining the un-agricultural part of the population, and augmenting the income of landholders."—[Gen. Farmer.]

ON SALTING PORK.—As the season for salting pork has arrived, we would recommend it to those who wish a fine article next summer, to salt theirs without any bone in it. This requires but a little extra labor, which is abundantly compensated for in the superior quality of the article. The bones may all be taken out with but little flesh upon them, and that when cooked fresh makes one of our finest dishes. Who is there that is not foud of a fine spare-rib when roasted? and yet, that very part, when salted, would be but indifferent. The action of salt upon bone has a tendency to give to pork, when salted with them, a different flavor to that from which they were all extracted. Be very careful not to put pieces in the barrel that have blood upon them, as that will give to the whole a bad flavor. Use plenty of salt; that which remains undissolved will be good for adother year. Saltpetre is rather injurious to pork than otherwise, and should never be used by those that wish it in the greatest perfection.—[Gen. Farmer.]

ECONOMICAL BREAD.—The Rev. Mr. Haggitt, of Durham, England, has stated a successful experiment for saving the consumption of flour in making bread. Mr. Haggitt gives the following accounnt of the process: I took five pounds of bran, boiled it, and with the liquor strained from it, kneaded fifty-six pounds of flour, adding the usual quantity of salt and yeast. When the dough was sufficiently risen it was weighed aud divided into loaves; the weight before it was put into the oven being ninety-three pounds thirteen ounces, or about eight pounds ten ounces more than the same quantity of flour kneaded in the common way. It was then baked two hours, and some time after being drawn, the bread was weighed, and gave eighty-three pounds and eight ounces—loss in baking, ten pounds and five ounces. The same quantity of flour kneaded with common water loses about fifteen pounds ten ounces in the baking, and produces only sixty-nine pounds and eight ounces of bread; gain by my method fourteen pounds, that is, a clear increase of one-fifth of the usual quantity of bread from a given quantity of flour. He also states that the bran, after being used in this way, is equally fit for many domestic puposes.—[N. E. Farmer.]

CANAL COLLECTOR'S OFFICE,
Albany, Dec. 24, 1832.

The whole quantity of down freight, upon which toll is charged by freight, that was conveyed on the New-York Canals to the city of Albany, during the season of canal navigation in the year 1832, amounts to one hundred and nine thousand three hundred tons, estimating a ton at two thousand pounds, and consists principally of the following articles:

422,695	barrels	Flour
19,091	"	Ashes
21,274	"	Beef and Pork
21,285	"	Whiskey
1,274	hhds.	do.
23,117	bushels	Salt
145,960	"	Wheat
57,929	"	Coarse Grain
151,014	"	Barley

Also, the following property, upon which toll is not charged by weight:

15,224	cords of Wood
55,569	feet of solid Timber
36,020,594	" sawed Lumber.

The quantity of Merchandize, &c. that was conveyed on the Canals *from* the city of Albany was forty-six thousand seven hundred and ninety-one tons, and the amount of toll paid thereon at this office is two hundred and thirty-six thousand six hundred and twenty-eight dollars. The number of boats that arrived at and departed from Albany is thirteen thousand five hundred and twenty-one.

JOHN B. STAATS, Collector.

Mangel Wurtzel.—Report of a Committee of the Doncaster Agricultural Association on the Advantages of Mangel Wurtzel as a Fallow Crop.

We are indebted to the Rev. H. Colman, for a pamphlet of the following report. We give it entire, in order to afford a specimen of the method which agricultural societies should obtain information.—[Ed.]

At the annual meeting of the Doncaster Agricultural Association in 1828, a resolution was passed, that it was desirable to extend the inquiries of the Association to other subjects of general interest besides Cattle, and a Committee was appointed to make inquiries and report the result of them on the use and advantages of Bones as a Manure.

The Committee at their first meeting prepared a list of queries to be submitted to the farmers, with a view of eliciting the necessary information.

They also laid out into districts the extent of country over which their inquiries were to run, and these districts were allotted among the members of the Committee; each member undertook to send the inquiries, and as far as possible procure returns from the farmers within the district, and was considered at liberty to extend them as much further as he pleased. The reference to the district will give an idea of the method and extent; it was as follows:—

Lord Visc. Althorp—Wiseton, Everton, Mattersea, Misson, Grinley, Clayworth.

Hon. J. B. Simpson—Babworth, Retford, Blyth, Grove, and the Forest.

Hon. W. Duncombe—Marr, Brodsworth, Hooton Pagnell, Hickleton, Clayton, Thurnscoe, Darfield.

Sir W. B. Cooke, Bart.—Bentley, Adwick, Burghwallis, Campsall, Owston, Armthorpe.

C. Wood, Esq. M. P.—Hemsworth, Ackworth, Badsworth, Kirby, Elmsall, Brierly, Felkirk, Hindley, Crofton.

W. B. Wrightson, Esq.—Sprotbrough, Melton, Barnborough, Loversall, Mexbrough, Conisbrough, Edington, Warmsworth, Wadworth.

F. O. Edmunds, Esq.—Worsbrough, Heyland, Wentworth, Hemingfield, Wath.

S. C. Hilton, Esq.—Rossington, Tickhill, Finningley, Austerfield.

Hy. Pilkington, Esq.—Park Lane, Hatfield, Thorne.

Geo. Martin, Esq.—Sandall, Barnby Dun, Kirk Bramwith, Fishlake.

Th. Short, Esq.—Bawtry, Scrooby, Haworth.

Jno. Fullerton, Esq.—Thrybergh, Rawmarsh, Hooton Roberts, Braithwell, Maltby.

J. W. Childers, Esq.—Cantley, Auckley, Blaxton, Wroot.

Honorary Secretary—Robert Baxter, Esq.

The next subject fixed upon, was "Mangel Wurtzel," and the following Report is founded upon Returns received in answer to the Queries issued by the Committee.

[Among the correspondents are some of the most distinguished gentlemen of the country.—ED.]

REPORT.

The subject which the Committee have selected for their Second Report, is one respecting a fallow crop of very recent introduction into this country, viz. Mangel Wurtzel; consequently, the answers to their queries are not so numerous as they could have desired, for the purpose of forming a correct judgment on the comparative value, in all respects, of Swedish Turnips and Mangel Wurtzel.

Amongst our Correspondents, some of the most valuable are from Norfolk, where two appear to have grown Mangel Wurtzel for ten or twelve years. Of the others who have favored us with their answers, seven or eight have used it for above five years; but the greatest part have only begun to use it within the last year or two. The answers are from every description of soil, the greatest number (nine) from sand, not, it appears, because that kind of soil is most favorable to it, but because on sand land fallow crops, of all sorts, are more generally grown than on any others: six are from peat, four from clay, four from chalk, or limestone.

The method of sowing appears to be drilling, or dibbling on ridges, from 27 to 30 inches apart, and afterwards singling out the plants in the rows, at about 16 or 18 inches distant from each other; the period of sowing, any time between the middle of April and the end of May; on cold soils, earlier than on warm.

The root is taken up in October or November, and stored, or pied, like potatoes, being covered with about one foot of straw, and afterwards with a few inches of mould; but care must be taken not to lay the mould on till the plants are quite dry, as they would otherwise be liable to heat and rot. The tops and leaves should be ploughed into the land immediately. In comparing the quantity of manure used for Swedish Turnips and Mangel Wurtzel, it appears, from the answers of those farmers who have tried Mangel Wurtzel longest, that both require nearly an equal quantity, or if any thing, the proportion for Swedes is rather the largest, though, at the same time, some lay on more for Mangel Wurtzel, especially if the Swedes are to be eat on the ground. The quantity may be stated as from 10 to 12 three-horse cart loads per acre. With respect to the comparative produce of the two crops, it appears to be in favor of Mangel Wurtzel, in the proportion of about one-fifth. The greatest weight obtained is by Mr. Simpson, of Babworth,—54 tons. Of our Correspondents, ten decidedly prefer Mangel Wurtzel; two give a partial preference to Swedes; and the rest have not expressed any opinion.

With respect to the succeeding crop of corn, six give it as their opinion that Mangel Wurtzel is detrimental, and two state the proportion of deficiency to be one-fifth; eight describe it as not injurious; and the rest have not made any statement on the subject.

The feeding properties of Mangel Wurtzel and Swedes are an important part of our investigation; Lord Althorp alone has fully tried their comparative merits: he writes thus, "I tried an experiment, by feeding two oxen abundantly on Swedish Turnips and Mangel Wurtzel, and the result was, that they increased in weight, each of them, when upon Mangel Wurtzel, much more rapidly than when upon Swedish Turnips, in proportion to the weight which they consumed. I next year tried the same sort of experiment on a single beast, and the result was similar, but rather more favorable to Mangel Wurtzel. I have heard that the giving large quantities of Mangel Wurtzel to beasts in very low condition has been found very dangerous; but I have never found any bad effects from the use of it with either cattle or sheep. It sometimes happens, that when the oxen are first put to Mangel Wurtzel, after coming from the pastures, that it disagrees with one or two individuals; in this case, I cease giving it to these for a few days, and when put to it again, it has always agreed with them very well." In this opinion his Lordship is supported by Mr. Kelk, of Sutton: but seven of our Correspondents are of opinion that Swedish Turnips will feed quicker.

With respect to Milch Cows, the answers are few, and still more doubtful than on feeding; many of our Correspondents state that they give it to their cows; five of them speak of it as producing more, and sweeter milk; but two of the Norfolk farmers say it is apt to injure the butter.

Having gone through all the points mentioned in the queries, the Committee consider that on the whole the answers are most satisfactory in favor of an increased culture of Mangel Wurtzel; for, in the first place, the Norfolk farmers, who have used it longest, and on the soils where the Turnip is most likely to compete with it, still grow it in so large a proportion as from one fourth to one half of their yearly fallows, and at the same time express an opinion that it is on stronger soil than theirs that it will be the most useful.

In giving their opinion in favor of Mangel Wurtzel, the Committee by no means lose sight of the value of other fallow crops; but considering that there must be in every farm some land not kind to Turnips—that, with the same quantity of manure, a larger bulk of produce can be grown—and that for all land a change of fallow crop is desirable, they strongly recommend the introduction of it into every arable farm in the country.

To sum up—the advantages of Mangel Wurtzel are these:

It is more sure to plant—being very little liable to the fly, or grub,

It will produce more weight,

It is off the land earlier,

It is useful as a change of fallow crop when the land is tired of Turnips,

It will grow on land where Turnips cannot be raised,

It is better Spring food.

On the other hand, in favor of Swedish Turnips it may be said—

That the weeding and singling out are less expensive,

There is rather more time for fallowing in the Spring,

The succeeding crop is better than after Mangel Wurtzel.

Perhaps cattle feed best on Swedish Turnips when they are used alone.

It must, however, be remarked, that these two last evidences in favor of Swedish Turnips are not fully proved, and only partially supported.

In conclusion, perhaps two observations may be of use.

First, That the very early season at which Mangel Wurtzel should be sown, renders it highly expedient that the land should be made as clean as possible in the Autumn, so that a few days in the Spring may be sufficient to get it into a proper state for the reception of the seed.

Secondly, That wet seasons do not suit Mangel Wurtzel so well as dry; and consequently for the last two years the Swedish Turnips have been the more valuable crop of the two.

PUBLIC ATTENTION TO THE MANUFACTURE OF SILK.—The editor of the New England Farmer, after approving of a petition to the Legislature of Massachusetts for a bounty on Mulberry Trees and Silk, inserts the following letter from a lady. Miss Parmentier, of Brooklyn, had her cocoons spun in paper, rolled in the shape of a sugar-loaf, and pinned upon a board or other convenient article: a paper for each worm.—[ED.]

A lady who prohibits our making her name public, after some inquiries relative to obtaining some of Mr. Derby's Durham short horn cows, says, "I regularly seek for more information on the silk culture, and wish much to obtain such knowledge of the improved method of accommodating the worms with mounting frames, instead of the old fashioned custom of oak branches. I began last summer the work of feeding the worms, and, aided by Mr. Cobb's Manual, and the work of Dr. Pascalis, produced twelve bushels of cocoons. But after obtaining the reel from Mr. Cobb, was not able to find any one here to reel it, and have reason to fear have lost all the silk by not having it reeled in proper season.

"I am so well convinced of the value of the mulberry tree that I have lately set out 3000 trees of three and four years old—part at regular distances, and part thick in fences—being anxious to improve the little spot of land about my house (22 acres) I have also set out 3600 of the best orchard trees of grafted fruit, and about two thousand grape vines of the best sort for wine, with a large portion of native or wild vines, to see what may be done with land well stocked, well planted, and well tilled.

"The plate of the mounting frame for the silk worms in Dr. Pascalis' book is not such as any common carpenter can make them by. If in Philadelphia, or elsewhere, you can obtain the best mode of superseding the branches of trees, which spoil the floss, and require much labor to pick, you will do the silk culturist an important service; and during the season of leisure is the time for preparing for the next summer. I visited Mansfield, in July, when they were feeding the worms, with the hope of seeing the best improvements, but found the old way was still practised. I have no doubt that if there was an agent in this city, [New-Haven,] for the purchase of cocoons, or the silk reeled according to the improved reel, many families among the industrious classes would avail themselves of it. But during the last silk season I had many persons bring a few hundred, or a few pounds of unreeled silk to me to try to dispose of their labor, but I was unable to find a market *here* for my own; and for this cause, I heard several say that they would never have any thing more to do with silk. I am induced to name this circumstance to you, sir, in hopes that it may be in your power to remedy the evil and promote the cause. There must be a market open for all produce at the place, for small farmers cannot afford to send it to a distance.

* * * * * * *

"My natural love of rural occupations has induced me to build my cottage out of the city, where I prefer the hum of the bee to the rolling of wheels, and to converse with Dame Nature at early dawn, when her school room opens to give instruction to her children."

By the Editor.—We are under great obligations to the lady who favored us with the above remarks; and should be happy if some friend to American industry, who has a practical as well as theoretical acquaintance with the manufacture of silk, would oblige us with such directions as might meet the wishes of our correspondent. P. S. Du Ponceau, Esq. of Philadelphia, in a letter to Gen. Dearborn, published in the New England Farmer, vol. ix. pp. 57, 58, says, "I have discovered that we have in this country, from England, France, Germany, and

other places, manufacturers of silk of almost every description. We have silk throwsters, silk dyers, silk weavers, silk manufacturers, all but good reelers, without which the labor of the others must be at a stand. These then are all waiting for employment, some of them in very poor circumstances. All we want is the art of reeling, and every thing else will follow. As to mulberry trees and silk-worms, let but a good price be given for the cocoons, and they will be produced as if by magic. *Every thing, as the silk brokers say, depends upon good reeling.*"

BUTTER.—With the exception of leather, we believe there is no single article shipped from this place that bears any comparison to the value of Butter. We have been politely furnished by the two principal freighting establishments in the village, with the quantity of butter shipped by them respectively during the last sixty days, seven-eighths or nine-tenths of which was made in the county of Delaware. The quantity shipped by Penfield, Day & Co. was 8,678 firkins; and by Donnelly, Cooper & Co., 3,186 firkins, making an aggregate of 11,864 firkins. Supposing each firkin to contain 100 pounds, which is the common average, it would make 1,186,400 pounds. The average price we are told is about 13 cents per pound, which would amount to the sum of *one hundred and sixty-six thousand and ninety-six dollars.*—[Catskill Recorder.]

BREAD.—Most people are fond of bread mixed with milk, but many inhabitants of villages and cities are not able to procure it, not keeping cows, and the cost of milk by the qnart being often too expensive to allow them the use of it. The following cheap substitute for milk, renders the bread such a perfect imitation, both in taste and tenderness, to the *milk-mixed*, that the nicest connoisseur would not detect the difference. The secret is simply this: To good *emptyings* or *yeast*, and sufficient warm water to mix a *batch* of six or eight common sized loaves, add as much sweet *hogs'-lard* as a tablespoon will lift, or say three or four ounces, which must be intimately mixed, and well baked. The extra cost is not more than two cents; the bread keeps longer, is sweeter, without crust, and to our palate superior, when a little stale, to any kind we have ever eaten.

OHIO CANAL.—We learn from the Governor's Message, that the tolls collected on the Ohio Canal amount to $75,463 03
On the Miami Canal, 34,955 85
Making in the aggregate, 111,420 79
The increase from the receipts from the Ohio Canal over last year is $12,500, and the decrease on the Miami Canal is upwards of $1000. —[Mechan. & Farmer.]

STEAM CAR.—Mr. Benjamin Phillips, Architect, of Philadelphia, proposes to construct a Steam Car to travel on rivers at a speed of 20 to 25 miles per hour, to carry one hundred passengers, to draw 15 inches water, to be only one-third the weight of any other ordinary steamboat of the same dimensions now afloat; of far superior strength and safety, constructed on entirely new principles; the whole materials, except the engine and boiler, not to cost above $1,500, completely furnished and ready for operation by the first day of May next.

RAILROAD INTELLIGENCE.—The steam car South Garolina arrived at half past 7 P. M. on the 15th, from Branchville, (62½ miles,) in 7 h. 15 m., all stoppages included. 18 passengers; cargo, 70 bales of cotton—to sundry factors. Stopped at Summerville 30 minutes, to discharge freight cars.—[Charleston paper.]

MONUMENT OF BISHOP HOBART IN TRINITY CHURCH, BY MR. BALL HUGHES.—This beautiful piece of sculpture has elicited general admiration, and is certainly highly creditable to the accomplished artist from whose chisel it has emanated.

The design is happily conceived—it represents the Bishop, in the last stage of his existence, sitting on a couch, while a female figure of religion supports him on her left arm, and with her right points to the heavens as the reward of the pious Christian. The right hand of the Bishop is placed upon the Bible, which lies open upon his lap, to indicate that he places his reliance upon the precepts therein revealed. On the left side of the niche in which the monument is placed is a small window, which by the light it admits warms up the white marble, of which it is composed, and removes the idea of coldness usually attendant upon viewing statues of that material. The likeness is remarkably preserved, and the whole work greatly exceeds in its execution any thing of the kind that has yet been produced in America.

The following is the inscription on the base of the monument:—

"Beneath this chancel rest the mortal remains of John Henry Hobart, Rector of Trinity Church, in this city, Bishop of the Protestant Episcopal Church in the State of New York.—Born in Philadelphia in 1775—died during a visitation to the western parts of his diocese in Auburn, 12th Sept. 1830. This vestry, in behalf of the associate vestry of Trinity Church, have caused this monument to be erected in memory of the public services, private virtues, and Christian graces of their beloved and revered Pastor, in testimony of their respect for the wisdom, energy, and piety of the revered Diocesan, in honor of the faithful soldier of Christ, who on all occasions stood forth the able and intrepid champion of the Church of God."

NEW YORK VEGETABLE MARKET, Dec. 29.—The market may be said to be pretty well supplied with vegetables—commanding a little advance of price on account of the holidays, when a little extra indulgence in quantity and quality is expected.

Apples.—Russets bring $2 per barrel, Newtown pippins, $2,50 to $3; Spitzenburg, $2,50; greenings, $3,50 to $4. It would seem by the prices that Rhode Island greenings are the most profitable, provided the trees are as abundant and sure bearers as the others.

Potatoes of the best quality command 44 cents per bushel, common ones 25 to 30.

Beets sell for $3,50 per bushel which, we believe, is lower than common.

Carrots command 63 cents.

Cabbages, red, retail from 4 to 6 cents per head, of moderate size.

Spinnage brings 12½ cents per half peck.

Very little brocoli and cauliflower in market.

Poultry is very abundant, but prices tolerably good.

BLAUVETVILLE, Dec. 27.—Crops in general have been very good this season, corn abundant—apples scarce.

BRIGHTON MARKET, Dec. 24, 1832.—At Market this day 540 Beef Cattle, 110 Stores, 1807 Sheep, and 450 Swine. A few hundred Sheep, and 55 Swine have been before reported.

Beef Cattle—No particular variation from last week. We notice 3 or 4 fine cattle taken at a fraction more than $6. We quote extra at $5 *a* 5:75; prime at $4:75 *a* 5; good at $4:35 *a* 4:75.

Barrelling Cattle—Mess, at $4; No. 1, at $3:25 *a* 3:75; No. 2, at $3.

Stores—Two years old, at $10 *a* 17; yearlings, $7 *a* 12.

Sheep—We noticed sales of but a few lots, viz. $1:42, 1:67, 1:75, 1:92, and 2:17.

Swine—Considerable business has been done, and the market appears to be well supplied. We noticed one lot taken at 4 c., more than half sows; one lot at 4½, half barrows; one lot, more than two-thirds barrows, at 4¾ c.; at retail, 4¼ c. for sows, and 5½ for barrows.

[COMMUNICATED FOR THE NEW-YORK AMERICAN.]

METEOROLOGICAL RECORDS.

DATE.	Thermometer. Highest.	Thermometer. Lowest.	Barometer. Highest.	Barometer. Lowest.	WINDS.	WEATHER.
DECEMBER ..1	49	37	30.11	29.45	NW	Rain early—cloudy, high wind—clear at night.
2	34	26	30.24	30.05	N—ENE	Clear morning—overcast at noon—snow at night.
3	43	33	29.89	29.82	NE—NW	Rain.
4	43	41	30.01	29.64	N—NW	Cloudy day—clear night.
5	41	33	30.47	30.31	NE—NW—ENE	Clear morning—cloudy afternoon and night
6	46	32	30.46	30.36	SW—W	Fair.
7	56	43	30.47	30.28	NE—SW	Cloudy—rain at night.
8	58	44	30.05	29.70	SW	Heavy rain.
9	62	41	30.16	29.33	SE—NW	Misty morning—rain at noon—clear at 4, p. m.
10	48	40	30.16	30.06	SSW	Clear.
11	46	37	30.12	29.80	Calm—E'ly	Fair morning—overcast at 3, p. m.—rain at 6, p.m.
12	46	37	30.11	29.50	SSW—NNE	Rain during the day—clear at night.
13	41	37	30.10	30.04	E—ESE	Cloudy—rain at 3, p. m.
14	43	33	30.06	30.04	S&W	Cloudy.
15	44	33	29.79	29.63	NE—NNE	Heavy rain.

		CHARLESTON, S. C. Thermometer. 7 A. M.	2 P. M.	9 P. M.	Wind.	Weath	MONTREAL, L. C. Therm. 7 A. M.	Therm. 3 P. M.	Barom. 7 A. M.	Barom. 3 P. M.	Weath. 7 A. M.	3 P. M.
Oct...	1	61	68	64	NW	Cy	51	61	29.90	29.85	R	R
	2	52	63	60	NW	Cl	48	56	29.73	29.76	R	R
	3	56	69	64	SW	Cl	46	58	29.7	29.65	Fr	R
	4	60	69	66	SW	Cl	50	59	29.73	29.72	Fr	R
	5	65	70	68	E	Cy	61	66	29.57	30.00	Fr	Fr
	6	67	71	71	N	Cy	52	56	30.03	30.06	Fr	Fr
	7	68	74	78	E	Cl	52	62	30.01	30.03	Fr	Fr
	8	68	74	72	SE	Cl	45	68	30.2	30.25	Fr	Fr
	9	73	76	74	SE	Cy	44	64	30.42	30.37	Fr	Fr
	10	73	79	76	SE	Cy	57	59	30.0.	29.86	R	R
	11	74	81	77	SE	Cl	56	66	29.63	29.78	Fr	Fr
	12	74	80	77	SE	Cy	47	55	29.96	30.07	Fr	Fr
	13	74	79	76	SE	R	42	52	30.12	30.16	Fr	Fr
	14	74	79	65	NE	R	43	53	30.2.	30.25	Fr	Fr
	15	64	67	66	NE	Cl	32	42	30.42	30.44	Fr	Fr
	16	62	64	66	NE	Cl	38	46	30.45	30.25	Fr	Fr
	17	63	72	69	NE	Cl	47	60	29.99	29.9	Fr	Fr
	18	68	73	70	N	Dz	60	60	29.97	30.19	Fr	Fr
	19	68	73	72	NE	Cl	38	56	30.2.	30.12	Fr	R
	20	71	74	72	NE	R	56	65	30.28	30.16	Fr	R
	21	72	75	74	E	Cy	43	57	30.15	30.27	Fr	Fr
	22	74	77	75	E	R	35	52	30.32	30.25	Fr	Fr
	2	70	71	68	N	R	46	49	29.95	30.0	R	R
	24	62	64	56	N	Fr	35	50	29.98	30.02	R	Fr
	25	54	63	61	N	Fr	35	40	30.16	30.31	Fr	Fr
	26	53	61	56	NE	Fr	23	40	30.45	30.48	Fr	Fr
	27	53	64	58	E	Fr	39	50	30.35	30.30	R	Fr
	28	52	63	58	N	Fr	32	36	30.39	30.45	Fr	Fr
	29	48	58	52	NE	Cy	27	46	30.50	30.48	Fr	Fr
	30	48	61	58	NE	Cy	31	54	30.42	30.31	Fr	Fr
	31	60	65	63	NE	Cy	37	46	30.23	30.17	Fr	Fr
Nov..	1	65	65	65	SW	Dz	52	55	30.04	29.87	Fr	R
	2	67	69	67	E	Cy	46	44	29.98	30.18	Fr	Fr
	3	71	71	68	E	Fr	36	46	30.2.	30.23	Fr	Fr
	4	67	74	71	SE	Fr	40	47	30.21	30.19	R	Fr
	5	68	76	72	S	Cy	41	46	30.17	30.29	Fr	Fr
	6	78	75	70	SW	Cy	30	37	30.40	29.97	Fr	Sn
	7	70	77	70	NW	Cy	38	31	29.79	29.93	Fr	Fr
	8	64	55	52	NW	Cy	21	31	30.11	30.15	Fr	Fr
	9	51	55	47	N	Fr	30	35	30.03	29.78	Fr	Fr
	10	43	57	53	N	Fr	35	32	29.68	29.66	Fr	Fr
	11	51	62	59	S	Fr	32	42	29.75	29.89	Fr	Fr
	12	55	63	59	S	Fr	31	45	30.03	29.93	Fr	Fr
	13	54	62	57	SW	Fr	35	48	29.74	29.69	Fr	Fr
	14	55	61	57	NW	Cy	22	22	29.63	29.83	Fr	Fr
	15	57	59	52	N	Cy	12	18	30.1.	30.1.	Fr	Fr
	16	50	55	54	NE	R	2.	36	30.33	30.25	Fr	Fr
	17	59	60	57	S	Cy	32	45	30.31	30.23	Fr	Fr
	18	56	57	54	W	Cy	3.	40	30.09	30.00	R	R
	19	62	65	58	SW	Cy	3.	36	29.87	29.63	R	R
	20	42	5.	49	N	Fr	3.	26	29.48	29.85	Fr	Fr
	21	45	54	52	N	Fr	12	28	30.47	30.38	Fr	Fr
	22	46	52	49	NW	Cy	22	30	29.96	29.88	Fr	Sn
	23	45	60	47	W	Fr	28	34	29.76	29.71	Fr	Sn
	2	36	56	48	N	Fr	20	2.	29.86	29.8	Fr	Sn
	25	40	57	50	SE	Fr	22	32	30.02	30.12	Fr	Fr
	2	47	59	58	NE	Fr	32	36	30.07	29.96	Sn	R
	27	54	63	60	SE	Fr	3.	32	29.88	29.93	R	Fr
	2.	57	65	60	E	Fr	29	38	30.03	29.99	R	Fr
	29	52	2	62	S	Fr	19	21	29.95	30.18	Fr	Fr
	30	58	66	61	W	Fr	15	16	30.25	29.99	Fr	Sn

[*From Babbage's Economy on Machinery.*]

One of the most singular advantages we derive from machinery is in the check which it affords against the inattention, the idleness, or the knavery of human agents. Few occupations are more wearisome than counting a series of repetitions of the same fact; the number of paces we walk affords a tolerably good measure of distance passed over, but the value of this is much enhanced by possessing an instrument, the pedometer, which will count for us the number of steps we have made. A piece of mechanism of this kind is sometimes applied to count the number of turns made by the wheel of a carriage, and thus to indicate the distance travelled; an instrument similar in its object, but differing in its construction, has been used for counting the number of strokes made by a steam engine, and the number of coins struck in a press. One of the simplest instruments for counting any series of operations, was contrived by Mr. Donkin.*

Another instrument for registering is used in some establishments for calendering and embossing. Many hundred thousand yards of calicoes and stuffs pass weekly through these operations, and as the price paid for the process is small, the value of the time spent in measuring them would bear a considerable proportion to the profit. A machine has, therefore, been contrived for measuring and registering the length of the goods as they pass rapidly through the hands of the operator, and all chance of erroneous counting is thus avoided.

Perhaps the most useful contrivance of this kind is one for ascertaining the vigilance of a watchman. It is a piece of mechanism connected with a clock placed in an apartment to which the watchman has not access; but he is ordered to pull a string situated in a certain part of his round once in every hour. The instrument, aptly called a tell-tale, informs the owner whether the man has missed any, and what hours during the night.

* See transactions of the Society of Arts, 1819, p. 116.

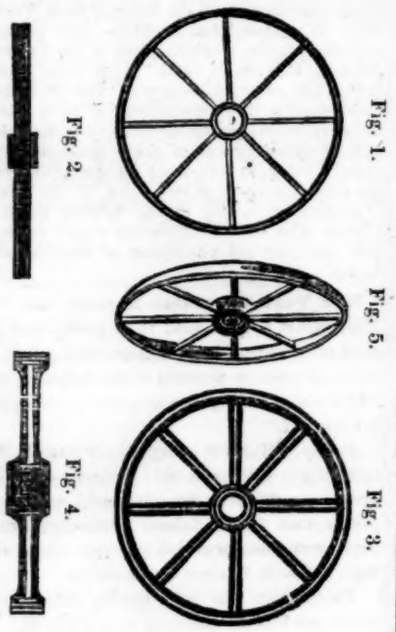
ENGLISH PATENTS.—Specification of the patent granted to George Forrester, Civil Engineer, for certain improvements in Wheels for Carriages and Machinery, which improvements are applicable to other purposes. Dated September 5, 1831:—

To all to whom these presents shall come, &c. &c.—Now know ye, that in compliance with the said proviso, I, the said George Forrester, do hereby declare, that the nature of my said invention, and the manner in which the same is performed, are described and ascertained in and by the following description thereof, reference being had to the drawing hereunto annexed, (that is to say)—

My invention consists in a peculiar mode of combining cast iron with wrought or malleable iron in the construction of wheels of all descriptions, (excepting those of such small dimensions as the wheels of clocks and watches,) and in the application of the same principle of construction to the framing for steam engines and machinery, the arches of bridges, and in every case in which cast iron framing may be employed, and wherein great strength and lightness are desiderata.

My mode of accomplishing the aforesaid combination is as follows:—I make a skeleton, or light frame, of wrought iron, or steel, of the shape of the article required, but of considerably less dimensions; this skeleton I render bright, free from oxide, and clean, by any convenient operation, such as grinding, scouring, and filing, to adapt it to receive a coating of lead, or bismuth, or tin, or zinc, or any mixture of those metals, such coating being performed by similar means to that used in the well known process called "tinning." The article to be cast having been moulded in sand (or loam) in the common way, the skeleton, coated as before mentioned, is carefully laid in the middle of the respective parts of the mould, projecting pieces being attached to the skeleton to keep it in its proper place; the mould is now closed, and the cavities formed by the pattern are to be filled up with fluid cast iron, which completes the operation.

By this mode of embodying or enveloping wrought iron or steel skeletons of the shape of the intended article, with cast iron, the latter material is not injured in its tenacity, while the former is considerably improved, and thus the important qualities of toughness and infrangibility are introduced into forms more perfect, and structures more solid than can be obtained in wrought iron alone. To prevent misconception, I annex a drawing illustrative of the construction of one of the leading objects of my invention, that of wheels for railway carriages and which will also serve satisfactorily to explain the mode of applying the principle of construction to the purposes before named.



DESCRIPTION OF THE DRAWING.—Fig. 1 exhibits a side view of the wrought iron or skeleton framing before described.

Fig. 2 shows an edge or outside view of the peripheral ring of the skeleton, showing its proportional breadth, and containing a number of holes made throughout its circumference for the purpose of allowing the fluid iron, in casting, to flow through the holes, and fix itself in a solid mass around the skeleton.

Fig. 3 represents a section of the wheel in the line of its motion, the blank line showing the skeleton embodied in the cast iron.

Fig. 4 shows a section of the wheel through its diameter, including two of the spokes; and Fig. 5 affords a perspective view of the entire wheel.—[Rep, Pat. Inv.]

A GRATEFUL COW.—On Thursday last, R. Williams, Esq. residing at Wolvercote, in the neighborhood of Oxford, ordered his bailiff to go into a certain field to drive out some cattle. On the man's entering the field, a cow ran at him furiously, which so alarmed him that he fled. The cow then stopped and bellowed in a loud and most distressing manner, as if anxious to gain his attention. On the man taking particular notice of her, she went to a ditch, where she both looked and bellowed so piteously, that he was induced to follow her, and when he arrived there he observed her calf on its back almost lifeless from its ineffectual struggle to recover a standing position. He relieved the poor animal just in time to save its life, on which the grateful mother jumped and fondled round him with all the playful and expressive affection of a dog, frequently licking his hand, and on all occasions since she has taken particular notice of the preserver of her offspring.

MANUFACTURES.—The following specimen of American eloquence is taken from the address of that highly accomplished orator, EDWARD EVERETT, Esq. delivered before the American Institute of the city of New-York, at their fourth annual fair:

"Of what are these curious machines, instruments and fabrics composed? They are wrought from the lifeless elements that surround us—from the inanimate growth of the forest or the field—from the shapeless masses of the quarry and the mine—and from the spoils of inferior animals—iron, clay, wood, leather, cotton, wool, dull unorganized matter. It is this which has been fashioned into machinery and enginery; and into various fabrics of ornament and use, which seem but little inferior to the mysterious organization of the living muscle, limbs and skin.

And whence are the power and skill, that have produced this new creation? What exalted spirit has endowed the lifeless stocks and stones with these wonderful properties? Who has gathered together the dry opaque sand and alkali, and transformed them into the beautiful medium, which excludes the air and admits the light; and cut and polished them into an artificial eye, which never aches nor grows dim, and which penetrates millions and millions of miles beyond the natural vision into the depths of the Heavens, and, on the other hand, reveals the existence of whole orders of animated beings, that are born and live, and die within a drop of dew? What magician has touched the fibres of the cotton plant—the fleece of the sheep—the web of an unsightly worm,—and converted into the most beautiful and costly tissues; and who, out of a few beams of wood, and bars of iron, and pounds of lead, has constructed the all-powerful engine that diffuses knowledge over the earth, and speaks with a voice which is heard beyond mountains and oceans, and the lapse of ages?

This magician, this exalted spirit, this (may I say it without irreverence?) this creator, is man: man, operating not with mystic power and fabled arts, but with the talents skilfully cultivated, with which he himself—fashioned as he is from the dust beneath his feet—is endowed by his Creator. The philosopher's stone, which has converted these lifeless substances into food and clothing or instruments of procuring it; the alchemy, which has transformed these rough and discordant elements into the comforts of human life, is the skill of rational man.

THE FARMER.—Happiness seems to have fixed her seats in rural scenes. The spacious hall, the splendid equipage, and the pomp of courts, do not sooth and entertain the mind in any degree like the verdant plain, the enamelled mead, the fragrant grove, melodious birds, the sport of beasts, the azure sky, and the starry heavens.

It is undoubtedly a fact, that in proportion to our population, too many leave the occupation of the agriculturalist for other employments. If this arises from its being considered that the employment of the farmer is not respectable, it is a very great mistake. Every thing is honorable, which is useful and virtuous. This is an employment instituted by God himself, and by him particularly owned and blest. It is that on which every thing depends. True, it is laborious; but then labor brings health, and health is the foundation of the farmer, in the condition of independence. His little dominion is his own, his comforts are his own, and he is not at the mercy of the public whim and caprice. It is not necessarily the case, in this happy country, especially, that the farmer must be a stupid ignorant man. He is taught in his youth the first rudiments of education, and he has many

spare hours to read. In the heat of a summer's noon, and by the long winter evening's fire, he has much time for his books, and in this country they are placed within the reach of all.

Old Practices.—In some parts of Scotland, in former times, the plough used to be drawn by four horses abreast, and required the attendance of three men. The business of one was to drive. For that purpose he placed himself between the middle horses, with his face towards the plough to guide it straight, and in this position he walked backwards with the reins in his hand. Another walked behind the horses with a crooked staff, which he fastened in front of the beam, and by means of it regulated the depth of the furrow, by raising or lowering the plough as occasion required. The ploughman followed with a hold on the stilts; and in this formidable and ludierous manner, they repeated their attacks upon the soil.

In harvest, a basket machine was placed on horseback for carrying home the grain, and persons were employed on each side with forks, to keep it on a proper poise. It is said that this practice was within a few years to be met with in Galloway.

Many practices, subsisting even at this day in Ireland, are still more ridiculous. Mr. Arthur Young tells us, that in Donegal he has actually seen horses ploughing, fastened by the tail.—[Lynn Weekly Messenger.]

Shooting Wild Turkeys. By E. M. W.

Shannonsville, Tenn., Oct. 20, 1832.

Mr. Editor: I perceive in the last number of the Register, you invite all sportsmen to come forward and contribute. In your section of the country, where canvass-backs, teal, rail, snipe, reed and black birds, are all the *flash*, peradventure by way of a variety, your northern readers would like to hear of deer, wild turkey, goose, duck, wild cat, and occasionally a panther hunt. As many of these transactions take place under my individual observation, I shall with pleasure give you information of any that would be worthy of notice. And then, Mr. Editor, as *you* like it. The wild turkey differs from the tame, in colour of plumage, being much darker, seldom or ever having any white feathers. Some of these birds weigh from fifteen to twenty pounds, and strut with vast importance; they are the only real exquisites we have.

The Tennesee river abounds with islands, covered with cane; these are the principal haunts of the turkeys, fifty in a gang is quite common. The usual mode of hunting is on horseback, with two or three well trained dogs; the grand object is for the dogs to rush in and confuse them, at which they separate and "take tree," whereof a well trained dog will give notice. A rifle is much preferable, as it is sure in good hands: when the flock is separated, they become so much confused, that you may often shoot four or five before they take wing. I have given you a rough sketch of dogs, in the act of treeing from a cane brake, I only give it for an idea, perhaps some of your limners can sketch from it.—[Sporting Magazine.]

Vocal Machinery of Birds.—It is difficult to account for so small a creature as a bird making a tone as loud as some animals a thousand times its size; but a recent discovery has shown that, in birds, the lungs have several openings communicating with corresponding air-bags or cells, which fill the whole cavity of the body from the neck downwards, and into which the air passes and repasses in the progress of breathing. This is not all: the very bones are hollow, from which air pipes are conveyed to the most solid parts of the body, even into the quills and feathers. The air being rarified by the heat of their body, adds to their levity. By forcing the air out of the body, they can dart down from the greatest heights with astonishing velocity. No doubt the same machinery forms the basis of their vocal powers, and at once resolves the mystery.—[Gardener's Music of Nature.]

Floral Dictionary, or Emblematical Definitions.

"In eastern lands they talk in flowers,
And they tell, in a garland, their loves and cares;
Each blossom that blooms in their garden bowers,
On its leaves a mystic language bears."

Acacia, signifies Friendship.
Amarinth—Immortality.
Belvidere—I declare war against you.
Balm—Sympathy.
Blue Bottle—Constancy.
Cowslip—I esteem, but cannot love you.
Crocus—Presumption. [not yourself.
Common China-aster—'Tis your gold attracts,
Chickweed—An appointed meeting.
Cypress—Despair.
Coat's leaf—Bond of affection.
Citronia—Pleasantry. [sonal charms.
Calacanthus—Moral beauty, superior to per-
Coral honey-suckle—Gratitude and affection.
Daisy—Unchanging sweetness and fidelity.
Flowering Almond—Perfidy.
Garden gilly-flower—Durable beauty.
Hawthorn—Hope.
Hyacinth—You trifle with me.
Hortensia—You are cold.
Indian Pink—Aversion.
Iris—I have a message for you.
Lilac—The first emotions of love.
Lavender—Distrust.
Locust blossom—Affection beyond the grave.
Lilly of the Valley—Modest beauty and retired
Little China-aster—Innocence. [worth.
Mountain Pink—Independent and aspiring.
Musk-rose—Capricious beauty.
Multi-flora—Liberality without ostentation.
Myrtle—Love.
Marigold—Jealousy.
Narcissus—Egotism or self-love.
Olive—Peace.
Polyanthus—Confidence.
Pea-blossom—Fickleness.
Red Rose—Beauty.
Red Pink—Pure and ardent love.
Rose Acacia—Elegance.
Rose Geranium—Preference.
Red Poppy—Consolation.
Sweet-brier—Simplicity.
Spanish Jessamine—Interested regard.
Snow-drop—Officious interference.
Tulip—Beauty, not intellectual.
Thyme—Activity.
Violet—Modesty.
Variegated Pink—Refusal.
Veronica—Fidelity.
White Rose—Silence.
White Pink—Purity of Sentiment.
White Jessamine—Amiability.
White Lilac—Youth.
Woodbine—Misfortune.
Yellow Rose—Infidelity, or disdain.

Barley in England.—Thirty millions of bushels of barley are annually converted into malt by the breweries of Great Britain; and upwards of eight millions of barrels of beer, (of which more than four-fifths are strong,) are brewed annually. This enormous consumption attests the fondness of the people for the beverage of their forefathers.

Agricultural Fair,—The Cattle Show and Fair of the Niagara District (U. C.) Agricultural Society was held at Clinton, Nov. 6, when there was a fine display of live stock and domestic manufactures, and Premiums to the amount of $160, were awarded. The Spring Fair of the Society is to be held at the village of St. Davids on the last Tuesday in May, 1833.

Tanning.—The Salem (Mass.) Gazette mentions that Mr. K. Osborn, of Danvers, has made an improvement in tanning, and discovered a new article for fuel. He has recently put in operation a steam mill, for grinding bark, beating hides, and smoothing leather. The only fuel used is spent bark or tan, which has hitherto in tan-yards been of no value. The engine, mills, and appurtenances, cost about two thousand dollars, and are equal to a grist-mill power. Tan has been long used in families in that vicinity as fuel, but its value has never before been fully tested. Its use at this mill proves a chord of it to be worth as much as a chord of white pine wood; one chord will grind six chords of bark; and that, with stoves and grates properly constructed, houses may be warmed, and all the cooking in families performed with no other fuel at a trifling expense.

Clearfield Town, Penn. Nov. 1.

A Land "flowing with Milk and Honey."—As regards the truth of the following statement, we have testimony from the most unquestionable authority:

Week before last, a gentleman living in Bradford township, Clearfield county, proceeded to cut down a large pine tree, in which he had previously discovered a number of *bees*. All things in readiness, and this lord of the forest laid prostrate before his assailants—without, however, receiving much other injury than the loss of his understanding—they proceeded to investigate his physiognomy more closely; applying the axe to his trunk in several places, and nothing but honey! honey! honey! meeting their astonished observation, and finding their vessels incompetent to hold the "flesh and blood" of which he abounded, a new supply was immediately furnished;—and now determined on finding the alpha and omega of his treasure, numerous incisions were again made, when a space of about 25 feet was found interlarded with combs, in many places not more than one inch of a shell remaining. Judgematically he was now split open, and the combs taken out and secured. The most singular fact is, that the upper combs were perfectly brown with age, and the whole exhibiting a group of strangely diversified colors, and possessing as many different tastes. The next morning they proceeded to ascertain the quantity of honey, when they found to be of the liquid which had left the combs eleven gallons, and the remaining combs to weigh more than two hundred pounds! The tree was two and a half feet in diameter, and no doubt was in possession of the bees twenty or thirty years.—[Banner.]

The Hunter's Morning Song. By J. L. R.

The following lines, says the Connecticut Mirror, are full of spirit. The hunters rousing to the chase, the sense of plaintive indolence which would keep them back, the magic morning, and the inspiring emotions which it inspires, are all beautifully depicted.

Away, away, to the mountain's blue,
Where the waving trees the bright clouds woo:
We will fly on the wings of the viewless wind,
And leave the dull, cold earth behind;
We will wander as wild, as gay and free,
As a rushing wave on a stormy sea.

Aha! aha! that wailing cry,—
They would charm us back with Love's lullaby,
For little they know the hunter's horn
Will thrill thro' the heart in the merry morn;
Let them shake their dull limbs and palsied head,
We will leave them to their sluggard's bed.

Away, away, how the sunbeams glance
From the burnished steel and the glittering lance;
How the morning mists are fading away,
From the burning beams of the God of Day;
They linger yet, o'er the mountains curled,
As if grieving to quit so fair a world.

Away, away, there is joy on earth,
And the rosy morning laughs for mirth;
There is joy in the breath of the balmy air,
As if Heaven had showered its odors there;
There is joy on the breast of the dancing wave,
And on the green banks that its waters lave.

No thought of the future shall darken the brow,
That is beaming with hope and happiness now,
For we leave all grief and worldly cares
To the gloomy mantle that dotage wears;
We will drink the light of the new-born day
Till its spirit fills us—away, away!

NEW-YORK FARMER.

JANUARY 1, 1833.

TO OUR PATRONS.—In presenting this, the first number of a new series, the Proprietor cannot avoid feeling and expressing some anxiety for its reception by those who have heretofore patronised the work. *Reforms* having been repeatedly promised—but, for want of the means, which were not furnished by the subscribers, Reformation was not always effected, and those who have before been promised, may now be inclined to *doubt*. To those we would say, that since the 26th of October, to the first of January, or 66 days, we have published the *October*, *November*, *December*, *Specimen*, and *January* numbers, which are equal to *six monthly* numbers as it has been heretofore published. If the friends of the Farmer will take our exertions during the short period we have had the publishing of it, as a guarantee for what we intend to do, and continue their patronage another year, they may rest assured that our promises shall be fulfilled to the letter.

The Proprietor feels highly gratified with the reception he has met from the Patrons of the New-York Farmer, and the friends of Agriculture generally, since he undertook the publication of this paper. The prompt replies of many upon whom he called for the balance due on old accounts, and the readiness with which others have come forward, subscribed, and paid *in advance*, for the ensuing volume, have confirmed him in his intention to print a large edition, in order that he may be able to meet any demand which will probably be made for the work hereafter. He cannot, however, permit the present opportunity to pass without again earnestly requesting those who have *not* responded to his call, for the small balance due on their accounts for past volumes, to forward, at the earliest convenient period, the amount due—an amount to each individual so small as to appear to him of little consequence, but *collectively*, and to the publisher of a *newspaper*, who generally handles very *small* sums—an amount that would meet his engagements, and make his creditors good natured again. They can have very little idea of the weekly *cash* expenses of a printing establishment, and of the small profit which the New-York Farmer, in its present shape,—even if it had a large list of subscribers, which it has not,—pays its publisher, or they would not hesitate a moment to pay up, not *only* the arrearages, but also for a year in advance, that he may be able to provide the best of materials at their *cash*, and not at their *credit* prices; and also, that he may always have a shilling in his pocket, and a cheerful countenance to receive them with when they do him the favor to call at his office. Some of them may say, it is *only* three dollars that *I* owe—*that*, certainly, can do him no good. Yes, yes, my dear sir, but it will: for there are two or three *hundred* of you in the same predicament, which you see makes six or eight hundred dollars,—or, enough to enable him to wear *his own coat*, and eat *his own bread*, and not that of his neighbors, as most printers of newspapers are obliged to do, when their patrons read the paper without paying for it. Besides, your grain, your pork, your apples, and your vegetables, all bring good prices, and the cash too, which will enable you to pay for the NEW-YORK FARMER AND AMERICAN GARDENER'S MAGAZINE—a work which, we most cordially hope, will be worth *at least a hundred dollars a-year to you*.

MODESTY OF FARMERS.—When inviting farmers to write for the public the result of their observation and experience, their declinature reminds us of ineffectual attempts to get the ladies to sing. If the latter are assured by the whole company that their compliance would be very gratifying, still their modesty cannot be overcome. We often hear farmers express their opinion with the utmost freedom, in a room where there are a dozen or more of others, and yet when invited to communicate these facts, which they themselves believe would be very acceptable and useful to the public, very bashfully decline, like young girls that will not sing to delight and instruct the company. We hope our robust and hardy veterans and sons of the soil, will excuse us for comparing them to sweet little misses who are afraid to warble. While on the subject of communications, we would observe that even one sentence is acceptable. We give the following as an instance:—A farmer of Rockland county, following the example of many others in sending three dollars for the Farmer, accompanies the letter with the following note—"Crops in general have been good this season; corn abundant; apples scarce." Such information we should be happy to receive every month from all parts of the Union.

HERBARIUM.—Dr. Perrine, U. S. Consul at Campeche, writes under date of Nov. 20, that orders sent through the editor of the New-York Farmer, for dried specimens of plants, and cabinet specimens generally in natural history, will receive punctual attendance. Those who are desirous of completing or increasing their collections, cannot have a more favorable opportunity to accomplish their purposes on more reasonable terms.

While on this subject, we would suggest to those who have a taste for natural curiosities, such as generally compose cabinet collections, to commence to lay a foundation for a family museum. It is surprising how many curious, useful, and pleasing specimens of the vegetable, animal, and mineral kingdom may be collected in a few years, and at very little or no expense. Within a few miles of every man's door may be obtained beautiful and valuable articles, the duplicates of which may be exchanged for those of other sections of our country and of other countries. Every parent should encourage his children to make their collections. The practice soon becomes highly pleasant, increases a taste for natural history, and a love for nature generally. In this way a collection may be made in the course of twenty years, that will command from one or two hundred to as many thousand dollars.

Wealthy individuals, who gratify themselves and children by the purchase of specimens of nature, may be ranked among those who give important aid to travellers. Many a young student of nature would start to explore distant and unfrequented shores, the wilds of forests, and the heights of rocky mountains, if he knew that the taste of his countrymen would lead them to expend a pittance of their substance for the beautiful and rare productions of nature. By giving their attention to these subjects, the wealthy indirectly become the benefactors of their country, by encouraging those who explore its resources and riches, and extend the researches of science.

Young aspirants for fame in natural history, and those who are fond of roaming over prairies, and ascending cloud-topped mountains, may be gratified to learn that specimens in conchology, entomology, ornithology, and mineralogy, generally command remunerating prices, if the specimens are fine, and from regions of country but little visited.

We cannot refrain from noticing the proper spirit which the collections of family museums would foster. After leaving school, youth would keep up acquaintance with their mates, by the exchange of articles of their collection. They would be desirous of obtaining specimens from every portion of the world, and hence they would be desirous of being remembered by their friends and acquaintances travelling abroad. Conscious of being thus under obligations to others, they will cultivate liberal, friendly, and gentlemanly feelings on their own part; and hence they are imperceptibly entering a course of discipline and study in science, manners, benevolence, and hospitality.

While penning these thoughts, which we did not, when commencing, intend should exceed four or five lines, we would remind those how egregiously they err, who look upon the objects of a museum as comparatively useless, and brand with folly those who explore plain, mountain, and forest, in quest of them. Do they not see how thus beautifully knowledge or science extends itself, expanding the intellect of man? Do they not know that approaches to perfection are gradual and require time, and diligent and careful culture?

☞ Notices of New Publications have been unavoidably omitted, owing to the shortness of—one third of the usual—time allowed to get out this number. Should our readers find this number deficient in variety, they must attribute it, in part, to the determination of the proprietor to be punctual in the publication of the work.

☞ The article on the Specification of a Patent, page 15, should have been credited to the Franklin Journal. We endeavor to be particular in giving proper credit; but omissions will sometimes occur. The little Juvenile Rambler, whose residence is in Boston, lately called us to account, but very charitably, as should all publications designed to teach the young idea how to shoot.

☞ This being the *first* number of a *new volume* and a *new series*, it will be sent not only to all who are now subscribers, but also to those who may have been formerly such, as well as to many gentlemen who have never been subscribers to the FARMER. Those who do not desire to be considered as subscribers, are respectfully requested to return the number to this office,—and it will not *afterwards* be sent to them, unless it should be ordered.